

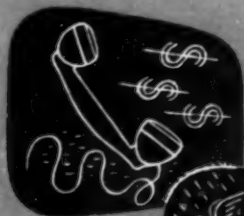
# COMMERCIAL REFRIGERATION & AIR CONDITIONING

JANUARY 1955



LIST OF EXHIBITORS  
12th International Heating  
& Ventilating Exposition

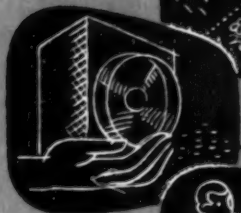
PAGE 68



\$70,000 PHONE CALL



SELLING ALL-YEAR SERVICE



COOLING TOWER SALES TIPS



360 SQUARE FEET OF CUSTOMER



STEPS TO SURE SALES



DIRTY-GLASS PROFITS

MERCHANDISING, SELLING, INSTALLATION AND MAINTENANCE OF  
AIR CONDITIONING AND COMMERCIAL REFRIGERATION EQUIPMENT

you don't have to be a prize

salesman

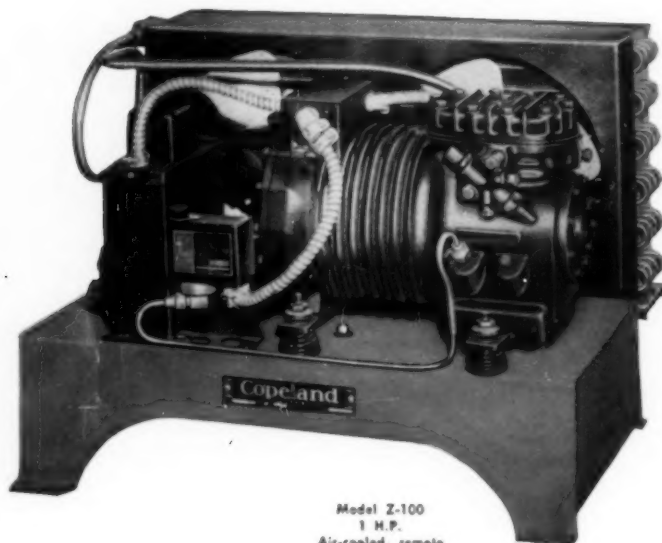
to sell **COPELAMETIC**  
THE *Accessible* HERMETIC



Just give 'em the facts. That's all.  
It buttons up your case and closes the sale.

Being a direct-drive motor-compressor, the compact Copelametic eliminates troublesome belts and seals. Manual oiling is not required. Those are facts a dealer likes to hear. But, your prime sales advantage with Copelametic is "accessibility." If the time ever comes when adjustment or parts replacement is advisable, you don't need to ship it back to the factory. That's where Copelametic differs from most hermetics. It can be serviced right on the spot.

Field-proved Copelametic units are quiet-running and highly efficient. There are sizes for all applications, remote or self-contained. Air-cooled models from 1/6 H.P. through 3 H.P., water-cooled from 1/3 H.P. through 7 1/2 H.P. Air-water combination in sizes through 3 H.P.



Model Z-100  
1 H.P.  
Air-cooled, remote  
COPELAMETIC

WRITE FOR CATALOG C-53



REFRIGERATION UNITS: OPEN TYPE AND COPELAMETIC; WATER COOLERS

**Copeland**  
DEPENDABLE *Electric* REFRIGERATION

**COPELAND REFRIGERATION CORPORATION • SIDNEY, OHIO**

Circle No. 1 on Reader Service Card

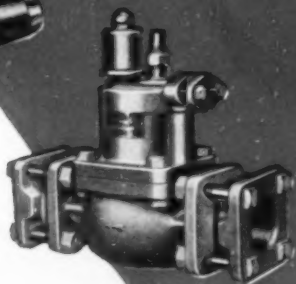
keep your coolers from busting



TYPE 780



TYPE 425



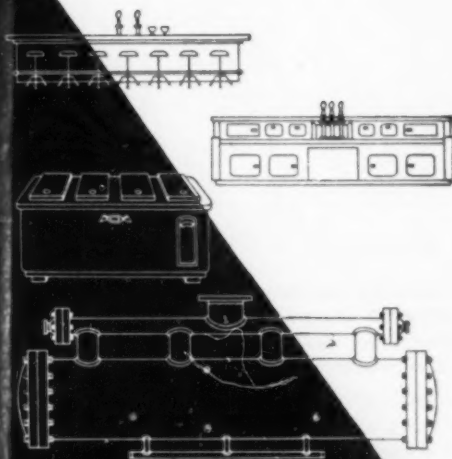
TYPE EPR

ENGINEERED  
for service  
for life

SEE YOUR ALCO WHOLESALER



Designers and Manufacturers  
of Thermostatic Expansion  
Valves; Evaporator Pressure  
Regulators; Solenoid Valves;  
Float Valves; Float Switches.



prevent freeze-up with

# ALCO

## EVAPORATOR PRESSURE REGULATORS

They hold evaporator pressures to a pre-determined point when the load changes. Available for any size water cooler—from drinking fountains to large industrial installations.

### ALCO VALVE CO.

343 KINGSLAND AVE. • ST. LOUIS 5, MO.

## The whistle that cleared the way for Brunner

It was in 1906... nearly half a century ago... that the BRUNNER name was added to the comparatively small list of America's industrial pioneers.

By building a compressor that furnished the "voice" for a boat whistle, Brunner took it's first step on the road to industrial prominence.

Over the years, Brunner experience in the compressor field has paid off in terms of finest quality, dependability and performance in refrigeration and air conditioning.

Brunner know-how and experience are your insurance that BRUNNER products will deliver long and lasting satisfaction.

### BRUNNER OPENS THE DOOR TO BIGGER REFRIGERATION PROFITS

There are Brunner Refrigeration Condensing Units for every commercial application... big or small... from 1/4 H.P. up to 75 H.P. They're noted for dependability... they're durable... easy to install and maintain... and they cost less to operate than many other units of similar capacities.

You can sell Brunner with full confidence that your customers are getting the most dependable refrigeration units that money can buy... with more profits for you.

See your Brunner Representative for complete information, or write to:

**BRUNNER MANUFACTURING COMPANY**  
Dept. G-155, Utica, N. Y.

The Brunner Co., Gainesville, Ga.

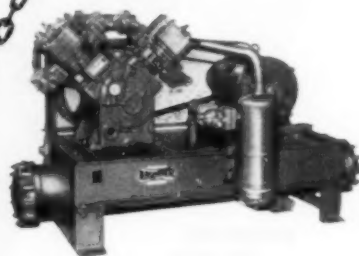
In Canada:

Brunner Corp. (Canada) Limited, Toronto, Ontario



### BRUNNER CONDENSING UNITS

... range from 1/4 H.P. to 75 H.P. for high, medium, low and extremely low temperature work. Easy to install, easy to service on the job!



**BRUNNER**  
SINCE 1906

**BRUNNER EXTRAS**

### Compressor Experience

Product Research  
Design Engineering  
Wide Product Range  
Proven Quality  
Complete Dependability  
Easy Servicing  
Warranted Performance  
Nearby Distributor Service  
Profit Opportunity  
Advertising Support  
Sales Promotion Help

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JANUARY, 1955 • COMMERCIAL REFRIGERATION



# COMMERCIAL REFRIGERATION & AIR CONDITIONING

JANUARY 1955 • VOLUME 12 • No. 1

IN  
THIS  
ISSUE

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- 36 **5 MILLION "SLEEPING BEAUTIES"** . . . tells the story of how a large nursery uses refrigeration to retard plant growth.
- 38 **PROFITS FROM DIRTY GLASSES** . . . are made by this dealer who found that pure ice cubes solved a serious problem for restaurants.
- 40 **CONTROL OF LOAD VARIATION** . . . in outdoor ice rink installations. A Detroit contractor comes up with an ingenious solution to a tricky problem.

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- 78 **THESE RESIDENTIAL UNITS DIDN'T STAY AT HOME** . . . instead, they provided a flexible air conditioning system for an industrial user.
- 79 **A CLEAN INSTALLATION** . . . was provided by this unusual filter setup.
- 80 **SELLING COOLING TOWERS WITH SMALL PACKAGED UNITS** . . . can prove an important source of "plus" business for the enterprising dealer.
- 82 **HE'S SELLING JUNE IN JANUARY** . . . by plugging year-round residential conditioning even through the winter months.
- 84 **HOW TO SELL ALL-YEAR AIR CONDITIONING SERVICE** . . . Here are some of the important heating facts a cooling man must know.
- 86 **SELLING ON WHEELS** . . . takes the equipment to the prospect's door.
- 88 **\$70,000 PHONE CALL** . . . If you never received a call like this, maybe you just didn't recognize it when it came.

## DEPARTMENTS

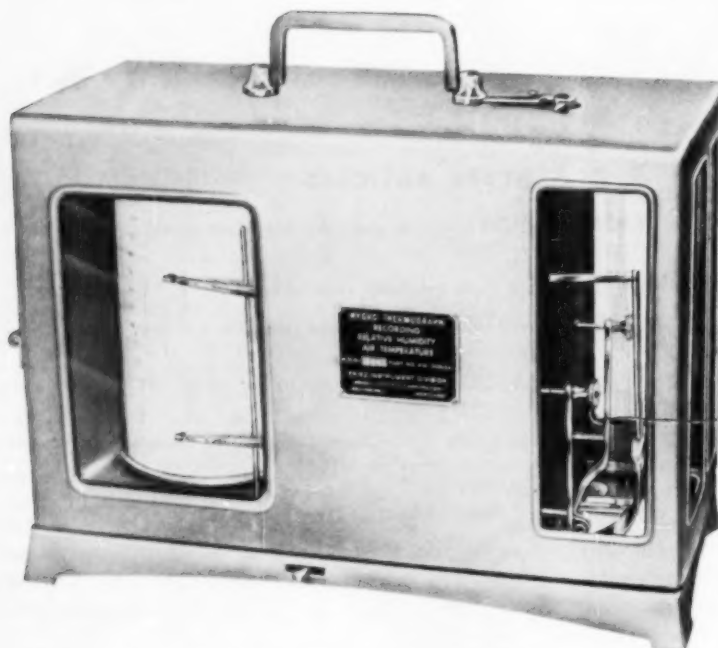
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# Keep The Record Straight

ON HUMIDITY AND TEMPERATURE  
and keep the record on one chart!



Keep it for a day (29 hours) . . . or keep it for a week (176 hours) . . . just as you wish. Inter-changeable gears are available on order to let you look at the record . . . day in and day out. No matching up of separate charts. It's all right in front of you . . . on one chart.

#### Air-Conditioning . . . and Refrigeration boon

Portable, this Bendix\*-Friez Hygro-thermograph can be placed anywhere you want to check the efficiency of your air

conditioning or refrigeration installation.

Precision constructed . . . one of the Bendix-Friez standards of the world . . . here is accuracy in a fine recording instrument.

#### Hygro-Thermograph

Can this precision instrument be of help to you? Inquiries are invited, without obligation, from the scientific and industrial fields, particularly concerned with air conditioning, refrigeration and heating.

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DIVISION OF BENDIX AVIATION CORPORATION, BALTIMORE 4, MD.

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Export Sales

Bendix International Division, 405 E. 42nd St., New York 17, N. Y., U. S. A.

Circle No. 5 on Reader Service Card

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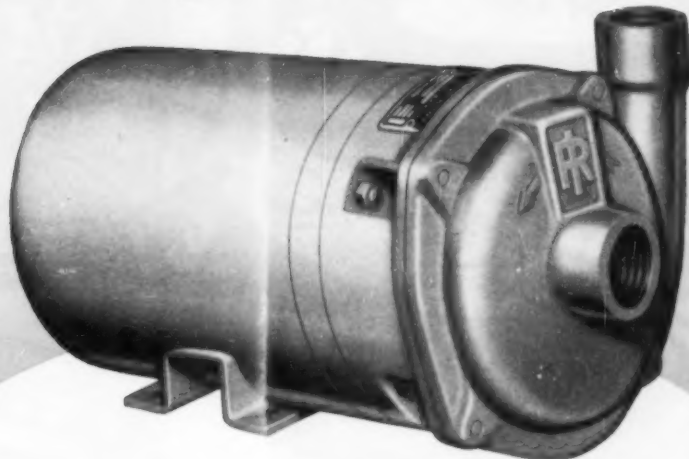
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# the **NEW** Ingersoll-Rand Motorpump



## **CONDITIONED FOR AIR CONDITIONING**

The most complete pump line  
for air conditioning service

### The **MOTORPUMP** Line



1/3 to 1 hp



1/2 to 1 1/2 hp



1 to 7 1/2 hp



1 to 75 hp

*This new Ingersoll-Rand Motorpump is truly conditioned for air conditioning work. Here is a pump with better hydraulic performance, a pump that is smaller and lighter in weight and just full of new features.*

*Built in 1/3, 1/2, 3/4 and 1 horsepower sizes this new Motorpump delivers the maximum with a minimum consumption of power. If you are currently in need of an air conditioning pump that will deliver up to 48 gallons per minute and reach heads up to 100 feet, then investigate Ingersoll-Rand's new Motorpump with:*

- 1—Mechanical seal—rotating ceramic seal face against a stationary "Teeplelite" seal face.
- 2—Positive impeller attachment (key and cap-screw)—not just an impeller screwed on the shaft.
- 3—A unique manner of rotating pump by hand to loosen seal and ring fits on spring start-up after winter shut-down.

Ingersoll-Rand now adds this unit to its famous Motorpump line that starts at 1/3 hp and goes to 75 hp. Deliveries range to 2800 gpm and heads to 650 feet.

Get in touch with your nearest I-R branch office today and build your business on satisfied customers—customers for whom you have installed an Ingersoll-Rand Motorpump.

# Ingersoll-Rand

Cameron Pump Division

11 Broadway, New York 4, N. Y.

9-45

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**TWO . . .  
are better  
than one!**

**FREEZ-KING**



**DOUBLE FEATURE**  
Doubles Your Speed . . . Doubles Your Profits!



**A FREEZ-KING MODEL FOR EVERY PURPOSE**

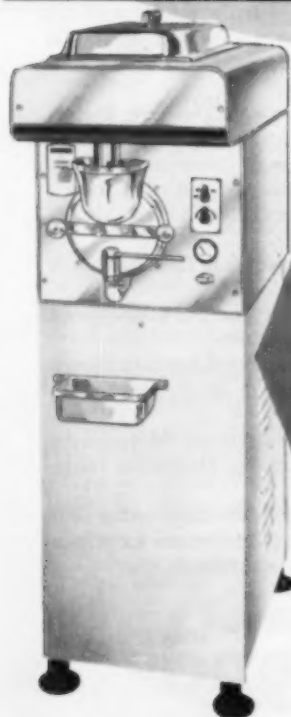
**AMERICA'S MOST COMPLETE LINE**

**OF CONTINUOUS SOFT ICE CREAM FREEZERS**



**MODEL 950**

King size power. Two complete freezers in one stand. Each unit operates independently. Every portion perfect. Exclusive Freez-King features include patented automatic feed, seeing eye dial, automatic temperature control, patented back feed. Amazingly simple to operate.



**NEW  
'55  
MODEL**

## **FREEZ-KING SHAKE DISPENSER**

**Draws Shakes Direct from Freezer at the Remarkable Speed of 360 an Hour!**

- Makes present methods old-fashioned.
- Saves time . . . saves labor . . . increases profits.
- Requires minimum floor space . . . only 20 x 25 inches.
- Special Freez-King mix formula produces rich, thick, creamy shakes at astonishingly low cost.
- Attractive in design . . . sturdy in construction . . . efficient in operation.

*The Freez-King Shake Dispenser is a boon to the fountain and drive-in trade.*

**WANTED: MASTER DISTRIBUTORS and DEALERS**  
Exclusive franchises available. Write for details.

**THE FREEZ-KING CORPORATION**

2518 W. MONTROSE AVE., DEPT. C, CHICAGO 18, ILLINOIS

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JANUARY, 1955 • COMMERCIAL REFRIGERATION



Hard selling takes time—

**Time** makes selling easy!



To clinch more sales in less time, quote a *monthly payment*, not a *total cash price*. Many of your prospects need their working capital and usual lines of credit for current operations. No matter how much they need your equipment, they can't sign your order *now* unless you show them a convenient, practical way to pay. That's the **COMMERCIAL CREDIT PLAN** way. When can we tell you our story? Phone our office in your city or write **COMMERCIAL CREDIT CORP.**, 14 Light St., Baltimore 2, Md.

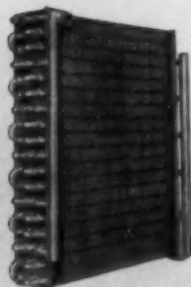


**COMMERCIAL  
CREDIT  
CORPORATION**

A service offered through subsidiaries of  
Commercial Credit Company, Baltimore ...  
Capital and Surplus over \$170,000,000  
... offices in principal cities of the United  
States and Canada.



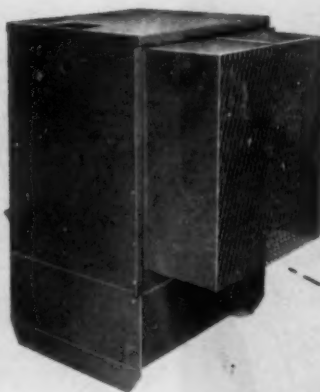
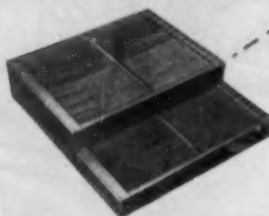
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WITH ALL COPPER WATER SURFACES...  
by BUSH**



ALL COPPER EVAPORATIVE CONDENSER COIL

OR

COPPER DECK FOR COOLING TOWER



PROPELLER

OR

BLOWER FAN



**YOU SELECT**

Inner-Fin Evaporative Condenser Coil  
(All Copper) or Copper Deck Cooling  
Tower with Propeller Fan or Blower Fan.

You'll find FLEXIBILITY in these Bush Water Savers, never before available. And Bush FLEXIBILITY enables you to maintain a complete stock, without being burdened with excessive inventory. Bush standardization makes this possible.

**LOOK AT THESE COMBINATION POSSIBILITIES!**

A Cooling Tower (with exclusive Copper Decking) can be used with either Propeller Fan or Blower Fan.

A modern Evaporative Condenser by simply replacing the Copper Decking with Bush's exclusive Inner-Fin coil.

Cooling Tower or Evaporative Condenser, you'll be completely astounded by the compact size.

See for yourself and be convinced, by taking a look at Bush Booth No. 250 at the International Heating and Ventilating Exposition in Philadelphia, January 24 to 28.



**BUSH MANUFACTURING COMPANY**

**WEST HARTFORD 10, CONNECTICUT**

# FIRST STEP in A Quality Installation...



## READING "LEKTROSEAL" COPPER REFRIGERATION TUBE

Soft temper for easier forming . . . dehydrated—with crimped ends to seal out all moisture and dirt . . . and keep the inside surface absolutely clean. Comes in handy 50-foot coil packed in its own convenient protective carton, clearly labeled for easy identification. To be sure of the job—be sure to specify Reading.



Sold Through  
Wholesalers  
Only

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- CHICAGO, ILL.  
724 W. 30th St.
- HOUSTON, TEXAS 1121 Rothwell St.
- ATLANTA, GA., 690 Murphy  
Ave., S.W., Unit 5, Bldg. 8
- CLEVELAND, OHIO  
4615 Perkins Ave.



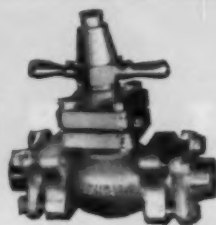
**PACKLESS VALVE**  
With balanced-action



**AMMONIA VALVE**  
Bolted Bonnet—screw or  
flanged connections. Also  
with screwed bonnet, sizes  
1" and under



**WING CAP VALVE**  
Non-ferrous



**WING CAP VALVE**  
Semi-steel—with companion  
flanges and adapters



**you pay—**

*no premium for..*

**the extra advantages  
found in**

*Henry products*

**or for the extra satisfaction  
that follows their use**



**STRAINER**  
Angle type with patented  
distortion-proof flange



**Y-STRAINER**  
Brass plated. Welded  
steel construction with  
forged brass connections.  
Size 1/2" O. D. S. through  
4 1/4" O. D. S.



**BALANCED-ACTION PACKLESS  
LIQUID LEVEL GAUGES**

Valves are backseating—  
diaphragms may be inspected or  
replaced without loss of liquid.  
Conforms with all safety code  
requirements.



**CHECK VALVE**  
Piston Type For Steam, Sizes  
1/2" through 4 1/2" O. D. S.



**DRIER**  
Cartridge type 12 to 500 cu. in.  
capacity. Size 1/2" to 2 1/4" O.D.S.



**DRIER**  
Large diameter and capacity—  
minimum pressure drop.

*... Write for these catalogs*

No. 101 Packless and packed valves, strainers, driers, check  
valves, relief valves, three-way valves, liquid gauge sets,  
flange unions and accessories for air conditioning, refriger-  
ation and industrial uses.

No. 201 Ammonia valves and accessories.

No. 71 Drop forged and cold rolled steel fittings.



**DIAPHRAGM RELIEF  
VALVE**

Large capacity—  
fast positive relief  
and resealing action.  
Very small differential  
between opening and  
closing pressures.



**STRAIGHT-  
THROUGH  
RELIEF VALVE**

Large capacity—All  
Brass Construction.  
Size 1/2" M.P.T.  
through 1" F.P.T.

**Stocked and Sold by Leading Jobbers**

VALVES • DRIERS • STRAINERS • CONTROL DEVICES and ACCESSORIES FOR REFRIGERATION and AIR CONDITIONING and INDUSTRIAL APPLICATIONS

**HENRY VALVE COMPANY**

MELROSE PARK, ILLINOIS Chicago Suburb

Cable: HEVALCO, MELROSE PARK, ILLINOIS

# *SPEED* your evacuating jobs

*with this*

## PORTABLE SERVICE STATION



Here's a self-contained, portable system for evacuating and charging refrigeration and air conditioning units. It's specially designed . . . with a Kinney High Vacuum Pump . . . to create the low absolute pressures required for dehydrating and degassing units utilizing refrigerants such as Freon 12 and Freon 22 and their supplementary liquids like alcohol and oil.

- Assures adequate evacuation of refrigerating and air conditioning units
- Precision visible charging
- Duplicates the exacting specifications attained in production of unit being serviced
- Proper and leakproof design of charging and vacuum manifold
- Simple, compact, reliable
- Accommodates inverted cylinder of Freon

Be sure to visit  
**Booths C 27-29**  
12th International  
Heating & Ventilating  
Exposition  
Commercial Museum,  
Philadelphia  
**Jan. 24-28**



Kinney High Vacuum Pumps are standard equipment in major plants manufacturing and servicing refrigeration, air conditioning, and quick freeze units. Whatever your vacuum problem, it pays to use a Kinney Pump. Our pumps can now be equipped with the Kinney Controlled Gas Ballast valve which prevents vapors from condensing within the pump . . . keeps the pump oil at the low vapor pressure required for continuous operation.

Competent vacuum engineers in our district offices will gladly work with you on your special requirements.

**KINNEY** MFG. DIVISION  
THE NEW YORK AIR BRAKE COMPANY  
2610 WASHINGTON STREET - BOSTON 30 - MASS.



Please send details on the following:

- ☐ Portable Service Station  
☐ Vacuum Pumps  
☐ Vacuum Tight Valves

Name

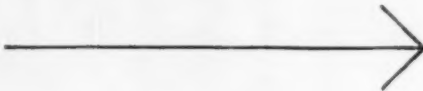
Company

Street

City  State



Mr. Bickel qualifies as an expert on air conditioning. In the fall of 1932 he signed up the first Carrier air conditioning dealers—and they were the first air conditioning dealers anywhere. Today, he heads up the dealer sales division of Carrier Corporation. In the years between, he has probably introduced more men into the exciting field of air conditioning than any other person.



# What does a good air conditioning dealer need most?

by **JOHN M. BICKEL**

Vice President and General Sales Manager  
Unitary Equipment Division, Carrier Corporation

A manufacturer pays my salary—but if you were to ask me what a good air conditioning dealer needs most, I'd have to say: a good air conditioning distributor.

The best air conditioning manufacturer in the world (and I know who that is) can't nourish and encourage a dealer the way a distributor can. When you've got a top-notch air conditioning distributor, he's on the spot when you need him. He'll help you train your men, help you dig up more business, help you close tough sales, and help you get the merchandise you need when you need it!

Maybe I'm prejudiced, but I feel Carrier has got a corner on a flock of good air conditioning distributors. These Carrier distributors have been deep in the air conditioning business for many more years than any other group of distributors—25 of them have been associated with Carrier for over 20 years. I've worked with them, I've had fun with them. And I say there isn't a finer body of men anywhere!

## **Your future looks good**

If you can tie up with a Carrier distributor, I'd say your future looks good! That's true whether you aim to start small with one product—or want to take on the whole Carrier line! Remember,

when you sell Carrier you can start with Room Air Conditioners, branch out into residential Weathermakers, add the Commercial Weather-maker line, top that by getting into the design and installation of built-up systems. You can even sell those money-making Carrier Icemakers! And your Carrier distributor will back you all the way!

You'll appreciate the fact that your Carrier distributor is located nearby and that he carries a full stock of the most complete air conditioning line in the business. He can handle your equipment orders quickly and economically. You can draw stock from his conveniently located warehouse. And, if you wish, you can even stock some of this equipment in your own place of business without any down payment!

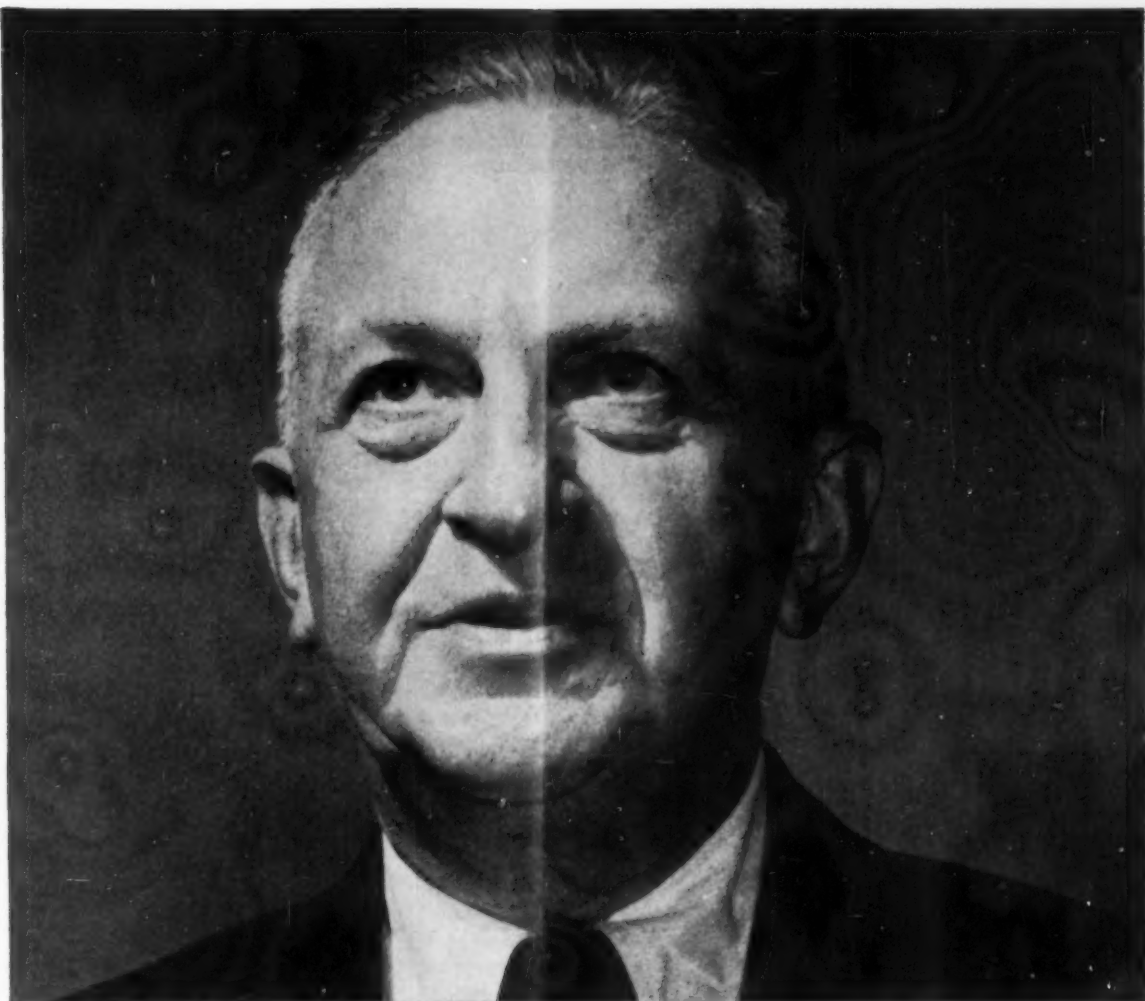
## **Financing made easy**

Your Carrier distributor offers his dealers four retail finance plans. Under one plan a residential air conditioner prospect pays only 10% down and pays the remainder in 36 monthly installments. Under an off-season plan, your customer needn't make his first monthly payment until May. And under another, room air conditioners can be sold with no down payment!

Your Carrier distributor has two full-fledged

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training programs to offer you...one on commercial air conditioning, the other on residential air conditioning. He has a Pocket-Size Weather-maker Handbook that will help you locate and close commercial jobs...and a big Question and Answer Book that's one of the reasons Carrier ranks Number One in residential air conditioning sales throughout the U. S. A.!

#### **Let me send you this gift**

If you are interested in becoming a Carrier dealer, please write to me direct. I'd like to hear from you and I'd like to send you as a gift something which every Carrier dealer treasures—and nobody else can get his hands on! I'm talking about our fine monthly dealer magazine, "Inside Carrier." It's a very good example of the extra attention every Carrier dealer receives. Thank you.

**Carrier**

**air conditioning  
refrigeration  
industrial heating**

**JOHN M. BICKEL, Vice President and General Sales Manager**  
Unitary Equipment Division  
Carrier Corporation, Syracuse, New York

Your article interests me. Please send me that copy of "Inside Carrier." And put me in touch with my nearest Carrier distributor. I'm interested in selling:

Carrier Room  
Air Conditioners ☐  
Carrier Self-contained  
Weathermakers ☐

Carrier Residential  
Weathermakers ☐  
Carrier System  
Weathermakers ☐  
Carrier Ice makers ☐

Name

Street

City  State

# ABOUT PEOPLE

**William F. Bowen** has been appointed district office manager for Penn Controls in the St. Louis territory replacing R. L. Persons, who resigned. Prior to joining Penn, Bowen was sales engineer for White-Rodgers, regional sales



W. Kase

W. F. Bowen

director of the heating Div. of Fairbanks-Morse, and sales representative for Morrison Steel Products. **William Kase** has been named sales engineer for the North Bergen, N.J., district office. He will work with George Sander, district manager, and Robert Eichman, sales engineer. Kase formerly was a sales engineer in the New York area for General Controls.

**Raymond W. Lawton** has joined Detroit Controls Corp. as the territory representative headquartering in New Orleans and covering Louisiana, Mississippi, Alabama and western Florida. Lawton previously had been a manufacturers' agent contacting plumbing and heating wholesalers and formerly represented the James L. Johnson Co.

**Roger H. Dowling** has been named assistant vice president, product quality of York Corp. Formerly general service manager, Dowling will now have overall

responsibility for the quality and serviceability of all products marketed by the corporation.

## HEADS MINERAL WOOL INSULATION GROUP



M. M. Wilson

New officers and directors of the Industrial Mineral Fiber Institute, Inc., were elected at the trade group's 14th annual meeting at Sea Island, Ga. Named president and chairman of the board was M. M. Wilson of Baldwin-Hill Co.

Other officers elected were: W. D. Myers, Jr., Eagle-Picher Co., vice president; and J. A. Corcoran, Jr., Forty-Eight Insulations, Inc., treasurer. Named directors were: G. J. Christner, Eagle-Picher; H. E. Lewis, M. H. Detrick Co.; N. L. Morell of N. L. Morell; E. R. Stevens, Baldwin-Hill; and Frank Christenson, Refractory & Insulation Corp.

**John Mucha** has been appointed the heating and air conditioning products sales representative in the northern Illinois and southern Wisconsin territory for McQuay, Inc.

**Laurence F. Hogan** has been named product specialist for transportation equipment, machinery and systems division, Carrier Corp. Hogan succeeds **Henry G. Strong** who joined the Refrigeration Industry Safety Advisory Committee as executive secretary. For the past several years, Hogan has been in close contact with the development of air conditioning and refrigeration projects for all types of trans-

portation. He gained valuable technical knowledge in cooling systems with Aircooled Motors, Inc., of Liverpool, N. Y.

Three new assignments have been made of personnel to handle the sales of Freon refrigerants in the East Coast and Middle West areas, it was announced by DuPont Co.'s Kinetic Chemicals Division. **Stuart L. Richardson** takes over the Michigan, Indiana, and Ohio territory, while **James Gay Gordon, III**, has been assigned the New York State and New England area. They will headquarter in the Chicago and New York City offices. **Robert B. Sangston** has been made a manufacturers' sales representative in the East Coast area from Pennsylvania and New Jersey south. He will headquarter in Wilmington, Del.

Four major executive personnel promotions in the sales department of the Frigidaire division of General Motors have been announced.



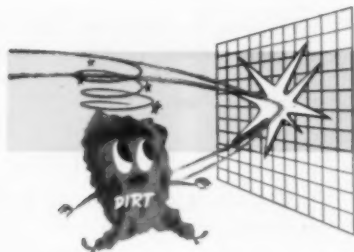
L. W. Smith

W. H. Anderson

**W. H. Anderson**, formerly appliance sales manager in Los Angeles, has been appointed division assistant general sales manager of the division. **W. F. Switzer**, commercial and air conditioning sales manager will take over the newly created position of merchandise manager of appliance sales. **L. W. Smith**, Dayton sales branch manager, will succeed Switzer. **R. L. DeMarse**, administrative assistant to the general manager, has been named to succeed Smith as Dayton manager.

*Continued on page 16*

BUY FROM YOUR  
REFRIGERATION WHOLESALER



**PROTECT YOUR SYSTEMS!**

## There's a DETROIT Strainer for YOUR installation



685 800 Series  
Y Type—Sweet  
Cleanable



685 800 Series  
Y Type—Threaded and Flanged  
Cleanable



685 800 Series  
Y Type—Threaded  
Cleanable



685 300 and 400 Series  
Straight—S.A.E. or Sweet  
Non-Cleanable



685 500 Series  
Straight—S.A.E. or Sweet  
Cleanable

Designed for refrigerants, water, oil, air and general usage, **DETROIT** Strainers are available in sizes up to  $\frac{3}{4}$ " S.A.E.,  $3\frac{3}{4}$ " sweat and  $1\frac{1}{4}$ " F.P.T. with flange. Standard strainers are equipped with 60 and 80 mesh reinforced Monel screens. Finer meshes furnished on special order.

With as much as 180 square inches of screen area, **DETROIT** Strainers are produced in both cleanable and non-cleanable models. They give you the ultimate in valve seat protection.



685 600 Series  
Angle—Sweet  
Cleanable



No. 782  
Straight—Flanged  
Cleanable



685 700 Series  
Direct Conn.—Threaded  
Cleanable

**DETROIT CONTROLS** provides you with a *single source* for a complete line of Expansion Valves, Solenoid Valves, Strainers, and Controls.

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Representatives in Principal Cities • Canadian Representatives in Montreal, Toronto, Winnipeg—Railway and Engineering Specialties, Ltd.

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Division of AMERICAN RADIATOR & STANDARD SANITARY Corporation

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AIR CONDITIONING • DOMESTIC HEATING • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES

*Serving home and industry*

AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

and AIR CONDITIONING • **JANUARY, 1955**

**A. G. Masiello**, previously with Remington Corp., has been appointed to the newly created post of assistant sales manager for Typhoon Air Conditioning Co., Inc. Masiello brings to Typhoon an extensive background in the air conditioning field. At Remington, as assistant to the general sales



manager, he spearheaded the establishment of the company's coast-to-coast distribution setup. Later, he served as field manager for the eastern seaboard.

**Jerome Bixby** has been appointed publicity manager for Typhoon Air Conditioning Co., Inc. Bixby has published numerous stories in the science fiction field and has served in editorial capacities on more than a dozen

magazines. In his new post, Bixby will allow Peter T. Wotton more time for advertising and promotional activities.

**William J. Donovan** of West Hartford, Conn., has been appointed New England sales representative for Kramer Trenton Co. Donovan formerly was director of engineering for Bush Manufacturing Co., where he was responsible for all engineering, design, development and research in heat transfer equipment. He is a licensed professional engineer.

**Russell E. Davis** has been moved to cover the Southern California territory for Dean Products, Inc. Davis formerly covered the St. Louis territory. He has been with Dean Products since 1947 on both cold plate coils and thermopans. Prior to Dean, Davis was with Hussmann Refrigerator Co.

**E. J. McGrannahan** has been appointed commercial room air conditioner representative in the Kansas City, Mo., area for Perfection Stove Co. Prior to Perfection, McGrannahan was manager of air conditioning for Edward Keith, in Kansas City, and had been sales manager for the appliance division of RCA Victor Distributing Co.



**J. J. Gallagher** has been elected president of Yates-American Machine Co. Gallagher was formerly vice president, and succeeds E. J. Dalton, who was both

## 'Frigeration Facts

**CAT "BLOWN" THROUGH PIPE**

WITH STRING ON TAIL, CAT WAS HUSTLED THROUGH PIPE BY COMPRESSED AIR TO GET CABLE THROUGH. THAWZONE "RIDES" THROUGH TUBING WITH REFRIGERANT - REACHES **ALL** THE MOISTURE IN RECEIVER, EXPANSION VALVE, ETC.

EVEN **BLOW TORCH** HEAT COULDN'T BREAK LOOSE THE MOISTURE THAT THAWZONE HAS DESTROYED. THE WATER IS **GONE** - CAN'T COME BACK TO TROUBLE YOU. BUT MODERATE HEAT CAN "**SQUEEZE**" MOISTURE OUT OF CARTRIDGE DRIER.



You get results with Thawzone that can't be had any other way. There can't be anything like Thawzone. It's patented. No other product will travel to the moisture and destroy it. Try Thawzone in any "Freon," methyl chloride or methylene unit. Just add 1 teaspoonful (½ oz.) per lb. of refrigerant. Highside Chemicals Co., Clifton, N. J.

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**THAWZONE®**  
THE ONLY PRODUCT  
THAT DESTROYS  
WATER AND  
REACHES ALL OF IT

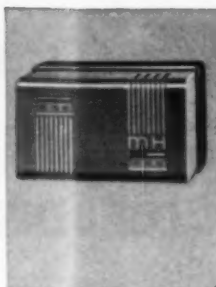




**T 414 Temperature Controller**  
A heavy-duty mercury switch device to cycle equipment according to remote bulb temperatures. Easy to adjust.



**L 413 Pressure Controller**  
Cycles operation by controlling suction line pressure. Holds control point. No shift even after thousands of operations.



**TA 420 Frigistat**  
A room thermostat for control of refrigeration and cooling machines. Snap acting contact. Corrosion resistant.



**T 420 Frigistat**  
A mercury switch room thermostat. Ideal for pilot duty. Highly corrosion resistant. Protected by an extremely rugged case.



**T 491 Airswitch**  
Especially useful when thermostat must operate under adverse conditions. Non-corrosive, mercury switch equipped.

# Honeywell Refrigeration Controls

*for large-building air conditioning*

*for freezer plant refrigeration*

*for frozen food warehouses*

*for warehouse cooling*

## Quality standard of the Industry

**P**UT 'em in—and forget 'em. That's what you do when you equip your installations with Honeywell temperature and pressure controllers, like those shown above.

This is possible only because they go on doing their job for years—requiring little, if any, attention.

There are good reasons for this long-lived service. Better materials and superior design, high standards of production inspection, a control point that doesn't shift, the use of dust-free mercury switches. The controls are built to function as precisely after thousands of cycling operations as they did when new.

From your customers' standpoint the controls are

invaluable. Because they are so dependable they safeguard his investment by protecting against freeze-up—and by ridding him of the worry of a disastrous thaw.

Eloquent testimony to the fact that Honeywell Refrigeration Controls are trouble-free is contained in yearly repair records. Of all the thousands of controls installed, a very minute percentage are ever returned for repair of any kind.

For complete information on the entire Honeywell line of refrigeration controls, call your local Honeywell office. Or write the home office, Honeywell, Dept. CR-1-96, Minneapolis 8, Minnesota.

MINNEAPOLIS  
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112 OFFICES ACROSS THE NATION



*First in Controls*



# THE MAGIC OF INNER-FIN NOW IN CH CHILLERS • IC CONDENSERS

Yes, there's magic inside these Heat-X products.

This "Inner-Fin Magic" makes the most compact Water Chillers, the most compact Shell and Tube Condensers on the market.

You don't have to be a magician to see the results . . . greatly increased heat transfer efficiency . . . minimum size . . . lower cost.

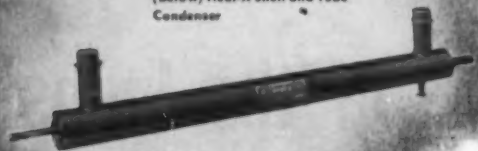
- Try Heat-X Water Chillers!
- Try Heat-X Shell and Tube Condensers!
- Get the efficiency-cost-size advantages both offer!

Write today for Specification Sheets.

## ALL BRASS AND COPPER CONSTRUCTION



(above) Heat-X Water Chiller  
(below) Heat-X Shell and Tube Condenser



**HEAT-X Inc.**

BREWSTER • NEW YORK

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chairman of the board and president. Dalton will continue as board chairman.

Carbonic Dispenser, Inc., announces three important additions to their staff of sales representatives. **O. J. Sponseller** of Canfield, Ohio, has been named district representative covering northern Indiana and Illinois. **Howard Fern**, of Massapequa, Long Island, New York, will represent the home office in the district which includes the Philadelphia and Washington, D. C. areas, along with all of Delaware and Maryland. **George W. Rhoad**, of Cleveland, Ohio, has been appointed as national carbonator sales representative.

**Louis J. Jones** has been named assistant sales manager of the ice machine division of American Gas Machine Co. Jones will be responsible for coordinating all details connected with ice machine sales, including all



advertising, public relations, the processing of orders and scheduling of shipments. He was formerly advertising and sales promotion manager of the air conditioning division of Sidles Co., Omaha, Neb.

**Marshall B. Taft** has been named general manager of the valve division of Minneapolis-Honeywell Regulator Co. He succeeds Stephen A. Keller, who has been named general manager of the new Heiland division of the company in Denver. Taft, formerly assistant to the president of the firm's industrial division in Philadelphia, will have responsibility for all phases of the valve division's activities.

**Carrol A. Peterson** has been appointed project engineer with the research and development de-

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## Super-Dry Refrigerants



### QUICK FACTS ABOUT

## **genetron**

### REFRIGERANTS:

- Super-Dry: guaranteed exceptionally low moisture content
- Non-corrosive to standard equipment materials
- Non-toxic, non-flammable, stable, safe
- Critical and freezing points are well outside range of operating uses
- Solvent action on oil helps prevent solidification or congealing of lubricant
- Miscible with oil; aid in lubrication of equipment

**genetron 11**—ORANGE LABEL  
TRICHLOROMONOFUOROMETHANE

**genetron 12**—WHITE LABEL  
DICHLORODIFLUOROMETHANE

**genetron 141**—GREEN LABEL  
MONOCHLORODIFLUOROMETHANE

For further information on "Genetron" Super-Dry Refrigerants—see your wholesaler, or write or phone any General Chemical office listed below.

VISIT BOOTH S95-97  
at the Air Conditioning Exposition,  
Philadelphia, January 24-28.



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Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo • Charlotte • Chicago • Cleveland • Denver • Detroit • Greenville (Miss.) • Houston • Jacksonville • Kalamazoo • Los Angeles • Minneapolis • New York • Philadelphia • Pittsburgh • Providence • San Francisco • Seattle • St. Louis • Yakima (Wash.)

In Wisconsin: General Chemical Company, Inc., Milwaukee

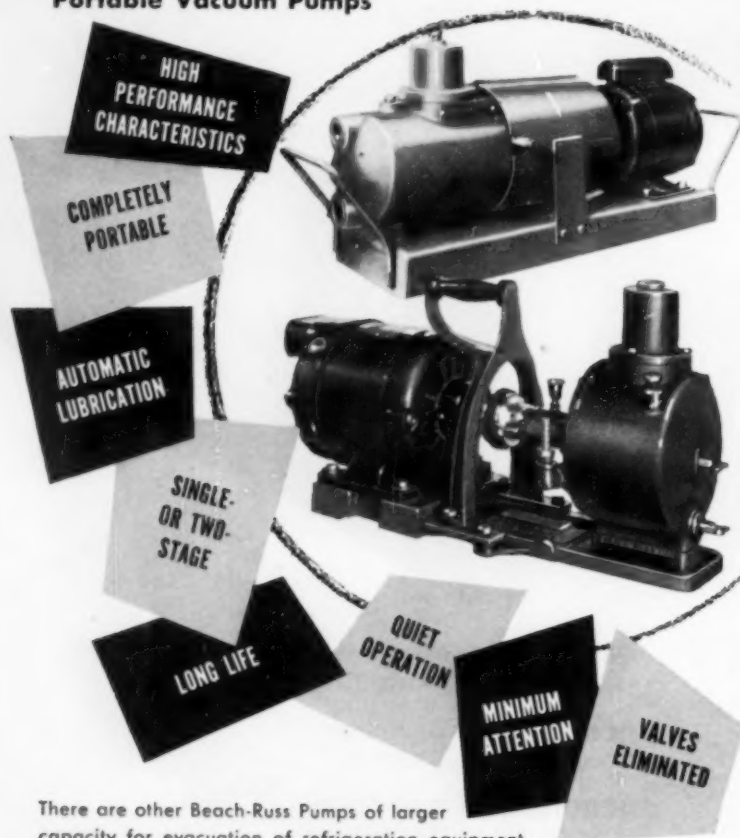
In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

# Everything

## THE SERVICE MAN NEEDS

for Air-Conditioning and Refrigeration Test Work  
is Found in BEACH-RUSS

Portable Vacuum Pumps



There are other Beach-Russ Pumps of larger capacity for evacuation of refrigeration equipment on a production basis.

### BEACH-RUSS COMPANY

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Send descriptive literature covering

☐ Model ☐ Single-Stage Vacuum Pumps.

☐ Model A Two-Stage Pumps.

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### BEACH-RUSS COMPANY

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partment of Flexible Tubing Corp. Prior to joining Flexible Tubing, he was with Connecticut Hard Rubber Co.

Joseph M. FitzGerald has been named sales supervisor of Kold-Hold Div., Tranter Mfg., inc. He had been the sales supervisor of Tranter's contract division. In his new capacity, FitzGerald will direct sales of



Kold-Hold's truck plates, serpentine plates and Kold-Trux mobile equipment for trucks and trailers. Previously he had been with Lonergan Mfg. Co. in a variety of capacities.

John R. Howell has been named sales manager and director of Sterling Electric Motors, Inc. Howell has been associated with the firm for over 25 years. Richard J. Zobel has been named Philadelphia district manager for Sterling. He had previously been serving this area as an application engineer.

Charles B. Bendix has joined Union Asbestos & Rubber Co.'s heating and cooling division as manager of contract sales. Prior to joining Unarco, Bendix was associated with Automatic Burner Corp.



and is widely known among heating industry manufacturers, wholesalers, contractors, architects, and home builders.

Allan B. Collins has been named district manager of the Kansas City, Mo., area for Electro

Dynamic Div., General Dynamics Corp. Collins has had over eight years of motor-generator experience. He formerly taught electrical engineering in the Army Air Corps.

**Charles F. Carnish** has been appointed district sales engineer for Reliance Electric and Engineering Co. Carnish joined Reliance in 1947 and worked for over three years in the company's electronic laboratory.

**Eugene G. Sears**, has joined Victory Metal Mfg. Corp. as chief engineer. Sears will concentrate on the design and development of Victory's Vimco, Sno-Queen and Sta-Kold line of refrigeration equipment. Sears formerly was with Ace Cabinet Corp. and General Electric.



**Russell A. Johnson** has been made divisional sales manager for refrigeration components of Houdaille-Hershey Corp. Johnson will headquarter in North Chicago.

Three new appointments have been announced by Betz Corp. **David H. Gold** has been appointed chief engineer. **Raymond J. Murray** has been named to the management staff. **Robert L. Hodapp** has assumed the duties of assistant sales manager. Gold formerly was with the Carrier Corp. in their research and development laboratory and was later assistant chief engineer of Aerofin Corp. Murray formerly served as plant superintendent of Coolerator Co., and Hodapp was formerly chief engineer at Betz before taking over the assistant sales managership.

# There's no "...or equal" for EASY-FLO and SIL-FOS

EASY-FLO and SIL-FOS are the original low-temperature silver brazing alloys conceived and perfected by Handy & Harman metallurgists.

Years of research went into the development of the alloys and the manufacturing methods and quality controls used in their production. In composition, in physical properties and in unvarying uniformity, EASY-FLO and SIL-FOS alloys stand alone.

It is from these exclusive features that EASY-FLO and SIL-FOS alloys get their remarkably fast brazing action and ability to make high-strength, liquid and gas-tight joints, consistently and at surprisingly low cost. That's why there's no "or equal" for EASY-FLO and SIL-FOS alloys when it comes to fast, reliable, economical metal joining.

## and there's no "...or equal" for these SERVICES

The following technical and practical assistance is available, without cost or obligation, to all users of EASY-FLO and SIL-FOS alloys through Handy & Harman's engineering and research departments, field service staff and nearest distributor.

**DEMONSTRATIONS** of EASY-FLO and SIL-FOS silver brazing in your own shop.

**SURVEYS** of your metal joining to determine if and where EASY-FLO or SIL-FOS brazing can benefit you.

**DESIGN AID** for your engineers to assure best joint design for EASY-FLO or SIL-FOS brazing.

**SAMPLE BRAZING** of your parts by our technicians to determine the best way to silver braze them.

**PRODUCTION AID** to help work out the procedure that will give you the output you want at lowest cost.

**OPERATOR TRAINING** of your key men in our brazing schools, or by a program we set up in your plant.

**RESEARCH** in our laboratories to work out your special silver alloy brazing problems.

### SEND FOR THIS LIST AND BULLETIN



You can get the real EASY-FLO and SIL-FOS alloys, and their companion low-temperature HANDY FLUX, only from Handy & Harman Authorized Distributors. They're located in principal centers throughout the country. Write for the "Distributor List" and contact the nearest one.

**BULLETIN 20** contains the full facts about EASY-FLO and SIL-FOS. It makes

clear why these alloys are being used today, in tremendous quantities throughout all industry. It also includes useful information about joint design and fast brazing production methods. Write for a copy.



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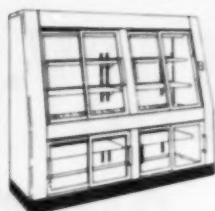
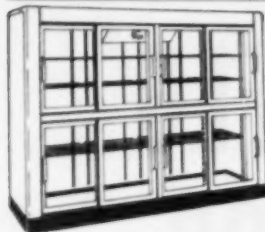
DISTRIBUTORS IN PRINCIPAL CITIES

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PROVIDENCE, R. I.  
CHICAGO, ILL.  
CLEVELAND, OHIO  
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LOS ANGELES, CALIF.  
TORONTO, CANADA  
MONTREAL, CANADA



## BUILD YOUR PROFITS . . . UP



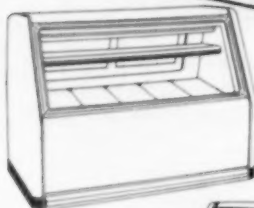
DAIRY & BEVERAGE WALL CASES



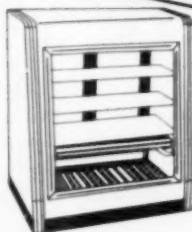
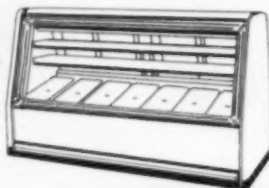
FULL VISION FORMICA TOP  
COUNTER & DISPLAY CASES



## WITH A SOLID *Coldin* FRANCHISE



DOUBLE DUTY BUTCHER &  
DELICATESSEN CASES

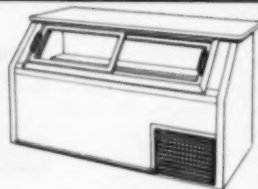
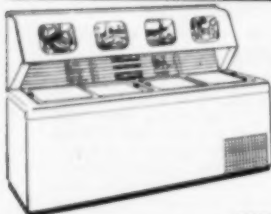


FULL VISION DISPLAY CASES



FRONT SERVICE DISPLAY CASES

## SELL FOR PROFITS . . . NOT PROBLEMS



FROZEN FOOD  
MERCHANDISERS



### THE COLDIN LINE HAS FEATURES TO SELL!

#### QUALITY • DESIGN • IMPROVEMENTS

The powerful Coldin line can be your key to new and larger volume in commercial refrigeration sales. "Quality" is more than a mere word with Coldin. It's the tangible result of better design . . . skillful craftsmanship. Simplicity of "design" helps insure work-saving convenience . . . more efficient performance. Coldin keeps an eye to the future, with improvements, that's why refrigeration "firsts" are credited to Coldin.

#### COLDIN — A FRANCHISE THAT MEANS PROFITS . . . NOT PROBLEMS!

Sell the line with the reputation for work saving convenience, dependable refrigeration and trouble-free performance. Sell COLDIN. It pays off in satisfied customers, more sales, more profits . . . not problems. Act today . . . Write or Write for facts!

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# COLDIN CABINET CO., Inc.

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JANUARY, 1955 • COMMERCIAL REFRIGERATION



*Presenting the Supreme in Self-Contained*

## **AIR CONDITIONERS**

**3 TONS THROUGH 20 TONS**



***With:***

Semi-Hermetic  
or  
Open-Type  
Refrigeration  
Compressors

**FIVE  
YEAR  
WARRANTY**

***For:***

Stores  
Offices  
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Wherever Exact  
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### **DISTRIBUTORS! DEALERS! REPRESENTATIVES!**

Our new policy of marketing Air Conditioners will be of interest to you. Several areas still open. Write or wire American Coils Co., Sales Department today.

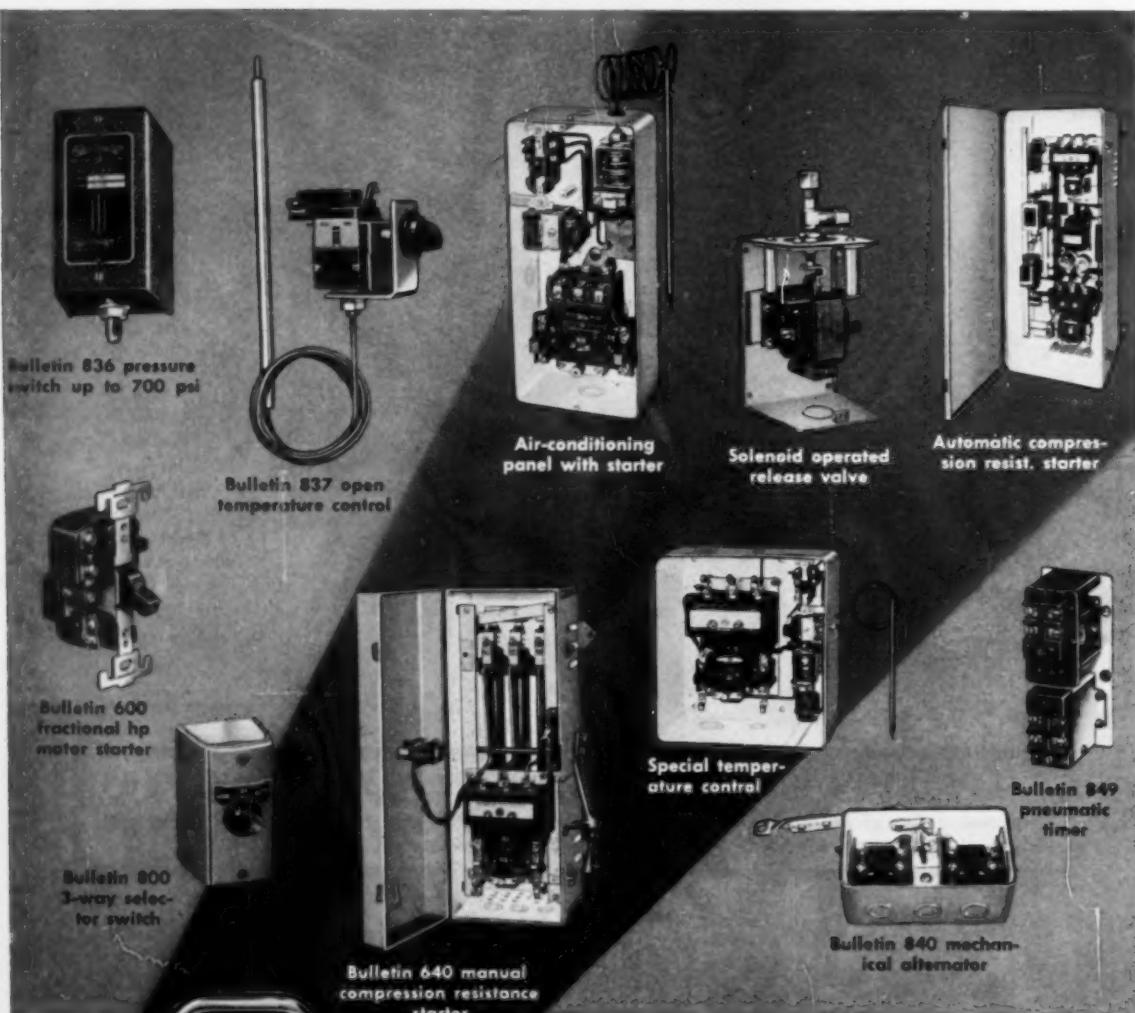


**AMERICAN COILS CO., 360-64 THOMAS ST., NEWARK 5, N. J.**

# QUALITY MOTOR CONTROLS FOR AIR CONDITIONING AND REFRIGERATION

Allen-Bradley motor controls are a sound investment. They are "tops" because they are good for millions of trouble free operations. Their silver alloy contacts need no maintenance. Reliable overload protection is provided by two accurate thermal relays. Specify Allen-Bradley...it stands for QUALITY.

Allen-Bradley Co., 1340 S. Second St., Milwaukee 4, Wis.  
In Canada—Allen-Bradley Canada Limited, Galt, Ont.



**ALLEN-BRADLEY**  
SOLENOID MOTOR CONTROL  
QUALITY



## Kooler-aire system

of "waterless" air conditioning



+



Kooler-aire operates on electricity only! Air cooled condensing unit, consisting of sealed compressor, condenser coil, blower and receiver, can be located in or out-of-doors. Unit is used in conjunction with housed cooling coil, which may be installed anywhere in outlet side of air supply system. Copper tubing carries the refrigerant from condensing unit to cooling coil.

# 3

**doggone good  
reasons for  
not missing**

## usAIRco

**at the show!**

Now usAIRco gives you the most complete line-up of home air conditioning equipment to hit the market! usAIRco units fit every type of home, every type of air conditioning problem! usAIRco home air conditioners have every advanced feature of design and construction ... made possible by more than 30 years of air conditioning know-how. With usAIRco you can meet every demand of the home market, profitably!



## "packaged" air conditioner

for commercial or home use



For home "add-on" installations, the usAIRco "packaged" air conditioner is quickly and easily connected to a warm air furnace. Only two simple duct connections are required. The home unit utilizes ductwork, blower and filters of the existing warm air heating system. For commercial use, blower and plenum sections can be added.



## Year 'round combination



home  
cooling and  
heating  
unit



The usAIRco year 'round combination cools, heats, filters and de-humidifies the air. Consisting of a gas fired furnace and matching air conditioning unit, this compact combination requires little more space than the average furnace. It can be installed almost anywhere ... basement, closet or utility room. Same ducts distribute both warm and cool air.

If you cannot visit the show, write us for complete information on a profit-proved usAIRco dealership!

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SEE OUR EXHIBIT AT

International Heating and  
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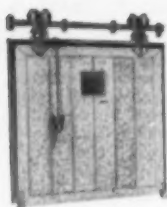
# How much have you been missing by not using JAMISON'S extra services?

You may already know of the efficient performance of Jamison Cold Storage Doors . . . their ease of opening . . . their

low maintenance. But do you know that Jamison also offers four valuable services unmatched in the industry?

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## JAMISON DESIGNS AND BUILDS ALL KINDS OF SPECIAL DOORS



A full-time research and engineering staff enables Jamison to design and build doors for practically any special requirement. Many times, all that's needed is to modify a standard door. Whatever the need, Jamison is equipped and prepared to build any door to your order.

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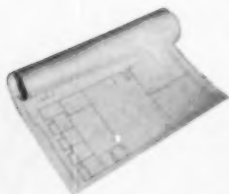
## JAMISON HELPS CONTRACTORS TO QUOTE ON DOORS



Upon request, a Jamison representative will call upon the architect, and take off the door specifications the insulation contractor needs to quote on a job. He'll then help to interpret specifications and supply the contractor with quotations on the specified doors and any alternates that can be offered.

---

## JAMISON ASSISTS ARCHITECTS IN PREPARING LAYOUTS



Jamison field representatives throughout the country are always available to work with architects in preparing layouts. They will help with the specifications to insure that the right door is used as well as the one most economical for the job.

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## JAMISON HELPS CONTRACTORS ON UNUSUAL SERVICE PROBLEMS



Jamison representatives work with contractors to provide the user the best possible service. Advice and suggestions on installing doors can frequently save service cost and trouble. Help is also available on unusual service problems.

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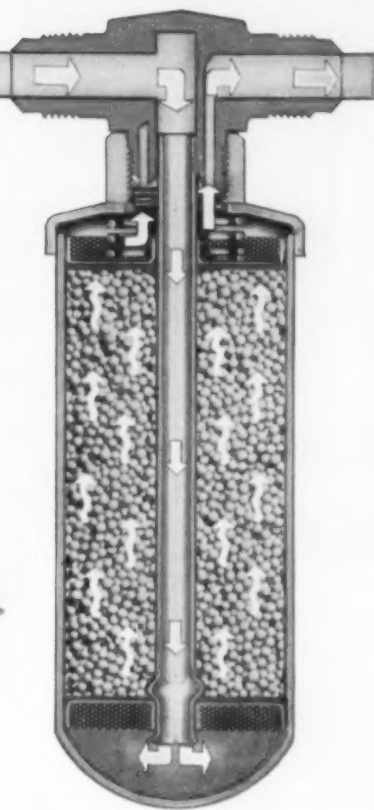
You can depend on Jamison for both a quality product and technical service. Jamison Doors have been the standard of comparison for nearly 50 years. Jamison field service can save you time, money and worry. JAMISON COLD STORAGE DOOR COMPANY, HAGERSTOWN, MD., U.S.A.



More JAMISON Doors are used by more people than any other Cold Storage Door in the world.

# stop acid here

ACID causes  
refrigeration system  
breakdown!



WITH DOUBLE-DUTY

## AN•DRITE

(ANSUL-TREATED 100% ACTIVATED ALUMINA)

**NEW T-FLO DESIGN**

"SCREWS IN LIKE  
A LIGHT BULB!"

Activated alumina in pellet form makes Ansul's new Andrite the double-duty desiccant. Its thousands of fast drying surfaces dry deeper—pulling moisture content way down. But even more important, Andrite removes acid, cleans up the chemical condition that causes sludge and corrosion—the major cause of refrigeration system breakdowns.

Designed for the revolutionary Ansul T-Flo Drier, Andrite won't break down or dissolve to plug filters or damage compressors. And the drier is easy to install, too. Even replacement

of the drier cartridge saves time, because it screws in like a light bulb. And no tools are needed. For fewer call-backs, speedier servicing, change to Ansul. And be sure to give new equipment double protection in acid and moisture removal. Use Ansul T-Flo Driers with Andrite.

For more information or answers to your refrigeration problems write to: Ansul Chemical Company, Refrigeration Division, Dept. D-1, Marinette, Wisconsin.

DuPont "Freon," non-foaming oils, sulfur dioxide, methyl chloride



# ANSUL



"K" Factor 0.21  
Zero Moisture Pick-Up  
No Vapor Barrier Needed  
Light Weight —  
4.5 p. c. l.  
Average Compressive  
Strength—60 p. s. i.



1980 pieces 17-1/2" x 35-1/2" x 1-1/2" of Rubatex were used to insulate the ceiling of Armour Pork Cutting Room. Rubatex was applied to a wood ceiling in a brick building, placed between the joists and held to ceiling by "Miracle" (Type R-2) adhesive.

## G. A. I. RUBATEX INSULATION HARDBOARD

*makes more cents* \*

as ceiling insulation at **ARMOUR and Company Plant**

Rubatex Insulation Hardboard R-103-S was used to insulate the ceiling of the Pork Cutting Room at Armour and Company's East St. Louis, Illinois plant. Average temperature maintained in the room is 50 degrees.

\* Pork Cutting Room is cleaned daily with hot water then cooled with a cold air blast in readiness for next day's operation. Because of moisture resisting qualities and the finished surface for ceiling application, Rubatex was selected to withstand the exceptionally high humidity conditions.

*Write us* about your low temperature insulation application. Let us show you how Rubatex Insulation Hardboard can make more cents for you — more cents in performance — more cents in production and power savings.



**GREAT AMERICAN INDUSTRIES, Inc.**  
**RUBATEX DIVISION**  
Dept. B — Bedford, Virginia

Circle No. 26 on Reader Service Card  
JANUARY, 1955 • COMMERCIAL REFRIGERATION



## Design fundamentals of the **ALL-AIR HIGH VELOCITY** distribution system

By F. J. KURTH

*Vice President of Engineering*

*Anemostat Corporation of America*



A national survey reveals that today, more than ever, engineers are studying, learning and using high velocity-high temperature differential air distribution. Here is a brief discussion of the advantages of the all-air high velocity system over conventional and mixed cycle (air and water) systems.

**1. No Coils — No Clogging — No Odor**—There are no coils in the all-air high velocity units. Damp coils collect lint and emit dank odors, and the coils must be cleaned periodically.

**2. No Individual Fans — Filters — or Electric Motors** — The all-air units operate entirely with air which is processed in the main equipment rooms. The 100% induction units utilize the kinetic energy of the high velocity air to mix primary air with the room air.

**3. No Conflict of Trades**—The all-air units are installed by the sheet metal trades only.

**4. More Effective Use of Outside Air in Spring and Fall**—More primary air is delivered to the all-air units than to induction coil units. This allows the engineers to operate in the Spring and Fall on outside air and thereby save refrigeration.

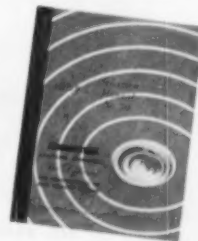
All-air high velocity units offer scientific air diffusion. Each high velocity unit is provided with an aspirating or high induction type air diffuser which is scientifically designed to diffuse air without drafts. Each unit can be pressure balanced by an easy-to-operate balancing device and a calibrated orifice. In fact, the Anemostat all-air high velocity system can be balanced more accurately than other systems and in less than half the time required to balance a low velocity system.

High velocity units require practically no maintenance after installation. They have valves of the non-corrosive, die-cast, "rocket-socket" type, which are patented by the Anemostat Corporation of America. All units can be adapted for the following variations:

1. Single duct for zone control or individual thermostatic or manual remote control.
2. Dual duct for thermostatic control or any other type of control.
3. Single or dual duct units with the diffuser fastened to the unit, or remote from the attenuating unit.
4. Under-the-window, sidewall or ceiling type installations.
5. Can be provided with standard aspirating diffusers or 100% induction type diffusers.
6. Induction type units handle temperature differentials up to 33° below ambient.

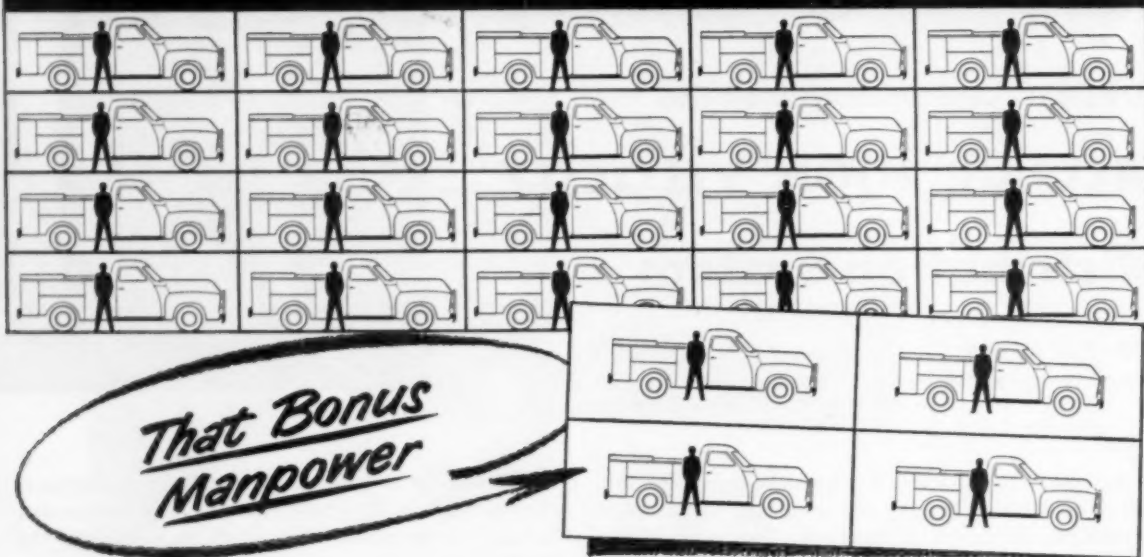
### *Selection Manual Contains Data on High Velocity Units*

New Selection Manual 50 gives extensive selection and application data on high velocity all-air distribution systems. Write on your business letterhead for Selection Manual 50 to the Anemostat Corporation of America, 10 E. 39 Street, New York 16, New York.



# 20 Service Trucks=24

WITH RCA RADIO DISPATCHED SERVICE  
IN A REFRIGERATION FLEET



A well-known Maryland refrigeration service organization has reduced downtime of customers' equipment and increased customer good will by installing RCA 2-Way Radio equipment in its 20-man truck squadron. "When we put in our 2-Way communication system we gained the effectiveness of a 24-man unit—complete with trucks and equipment!" declares the service manager.

This company figures their 20 service

men make 30 additional calls per day, which is the equivalent of 4 extra men and trucks. The average travel per call is cut from 3 miles to 2.5 miles, while the average number of calls per man per day has been increased from 7.5 to 9. In addition, telephone expense has been reduced, new customers have been obtained, office paper work has been cut to a minimum—all this at a saving of nearly \$5000 per year, while paying for the cost of the equipment.

You'll be surprised at the difference the installation of RCA 2-Way Radio

communication will make in your operation. Drivers can call the office as well as receive calls from the office. Doubling back to make calls, or stopping to telephone is unnecessary. The dispatcher has control he never before thought possible! And regular office personnel can operate the radio—it's just as easy to use as your telephone. The RCA reputation for all-out excellence of equipment assures long life and trouble free performance.

The RCA Service Company provides installation and service on a nationwide basis if desired.

—USE HANDY COUPON FOR INFORMATION—



**RADIO CORPORATION  
of AMERICA**

COMMUNICATIONS EQUIPMENT  
CAMDEN, N. J.

Radio Corporation of America  
Communications Equipment  
Dept. M-261, Building 15-1, Camden, N. J.

- ☐ Please send me reprint of article, "Baltimore Saves More Than Money with Radio-Controlled Cooler Service," which supports above statements.  
☐ Please have an RCA Communications Specialist call.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_ COUNTY \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

# NOW... IN THREE SIZES!



**Lipman**  
BELOIT, WISCONSIN



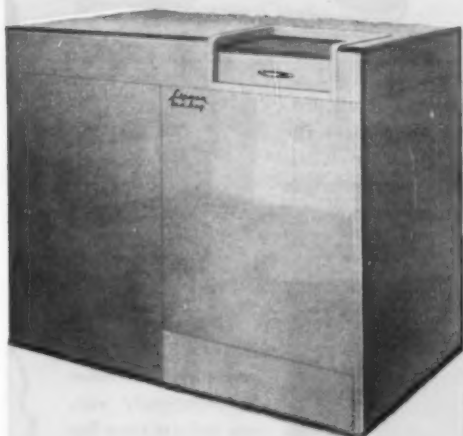
LC 25  
Up to 1000  
ICE TIPS  
PER DAY

FOR TAVERNS...this LC 25 "Ice Boy" fits easily under bar. Height 37½", Length 28½", Depth 24". Stores ice tips sufficient for over 600 drinks. Equipped with ¼ H.P. Compressor, Air Cooled Condenser.

## "ICE BOY"

THE COMPLETELY AUTOMATIC  
"ICE TIP" MACHINES!

Save money on your ice bills...and have an abundant supply of Lipman "Ice Tips" on hand...all the time! Lipman "Ice Boys" feature positive control of ice tip sizes, automatic shut-off when storage bin becomes full of tips, handy sliding door on top for easy access to ice supply, beautifully finished cabinets.



LC 60  
Up to 4000  
ICE TIPS  
PER DAY

FOR HOTELS, MOTELS, RESORTS and INSTITUTIONS... this LC 60 "Ice Boy" is our large capacity model. Height 37½", Length 48" and Depth 26½". Stores sufficient ice tips for more than 1300 drinks. Equipped with ¾ H.P. Compressor, Water Cooled Condenser.



LC 40  
Up to 1600  
ICE TIPS  
PER DAY

FOR LARGER BARS, COCKTAIL LOUNGES, AND RESTAURANTS... this LC 40 "Ice Boy" in cabinet size: Height 35", Length 38", Depth 26½". Stores ice tips sufficient for over 900 drinks. Equipped with ½ H.P. Compressor, Air Cooled Condenser.

### Featuring POSITIVE CONTROL

SIZE OF ICE TIP is not affected by variable temperature and pressure conditions. Micro-switch cuts off the freezing cycle, puts machine on defrost... which is positively controlled by time clock. Tip size will always be consistent.

### Lipman FULLY AUTOMATIC ICE CRUSHER

A companion piece to the Lipman Ice Boy is this quality Crusher. It delivers crushed ice at the turn of a switch... knives adjustable for delivering from coarse to fine crushed ice.



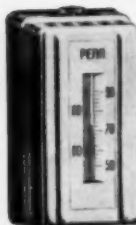
A PRODUCT OF **Yates-American** BELOIT, WISCONSIN





# VERDICT REACHED BY refrigeration men!

You'll agree with the verdict of refrigeration men everywhere that Penn cooling controls have precision-built accuracy . . . are easier to install . . . "stay-on-the-job" much longer . . . and eliminate costly service call-backs! In Penn's complete line, you'll find the *right* control to fit your needs exactly. Don't settle for less . . . use Penn every time on every cooling job. **Penn Controls, Inc., Goshen, Ind.**



Type 873 two-wire cooling thermostat for low or line voltage pilot service.

Series 246 water valve in sizes from  $\frac{3}{8}$ " to  $2\frac{1}{2}$ " for use with all refrigerants.



Series 270 temperature and pressure controls in single or double-pole construction.

Series 275 oil protection control for all pressure-lubricated refrigeration compressors.



Series 325 time-pressure defroster automatically varies defrost time for any load condition . . . avoids shut-down time.

## PENN

**AUTOMATIC CONTROLS**

FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Circle No. 30 on Reader Service Card



**EQUIPMENT TO TEST** the hundreds of items the Army buys for our troops all over the world comprises an important part of the new Quartermaster Research and Development Center, recently dedicated in Natick, Mass. In the center's Climatic Research Laboratory are Arctic and Tropic chambers which can produce temperatures from -70 to plus 70 F in the first room, and from zero to 165 F in the second. At the same time, if desired, the chambers can be subjected to controlled wind velocities up to 40 miles per hour. An important phase of the tests, besides those of equipment, will be on research in human stress physiology related to combat efficiency.

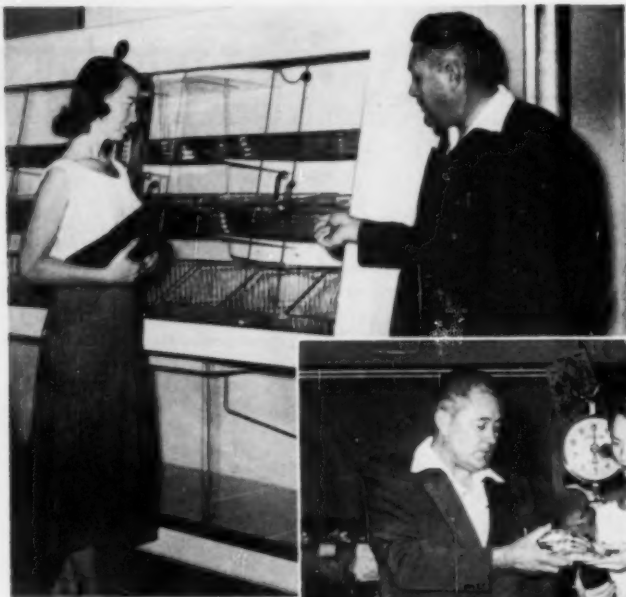
**THE HEAT PUMP** is developing as the mobilization point around which the electrical industry is assembling its campaign for the lion's share of the year-round air conditioning business power revenue. This was the statement of Sheldon Coleman, president of the Coleman Co., at the recent AGA convention in Atlantic City. He said that heat pump makers and electric utilities are making plans to sell a million heat pumps a year within 10 years.

**"COLD OFF THE ICE"** instead of "hot off the fire" comes the food from the mechanically refrigerated portable buffet which has been put to use in the grill room of the Trocadero Restaurant in London, England. From outward appearances, the buffet is simply an enclosed circular table, mounted on wheels, with a center column rising about a foot above the serving surface. Installed in the base section of this table is a hermetically sealed refrigeration system. Cold air is circulated by a horizontal fan and is discharged through louvers in the face of the center column to chill the food displayed on the serving table.

**MOST WANTED COMFORT ACCESSORY** on new cars today is air conditioning, according to an analysis made in four major cities by one automobile manufacturer. This market study indicated that the demand for this equipment is neither regional, seasonal, nor restricted to certain income groups. Confirming this trend, industry figures show that dollar volume will exceed \$30 million for the first time in 1954 for factory installation of 60,000 to 65,000 units. Industry observers believe that 1955 factory unit sales will approach 100,000.

**PRE-COOKED FROZEN LUNCHES** for serving hot may be in the offing for public school children in Chicago's more than 200 schools. Officials recently tried a test lunch served hot and were pleased with results. Already pre-cooked and frozen, the food came in compact aluminum foil containers; these were placed in water heated to 180 F, and were ready for serving in five minutes. The system pleased officials in the test experiment; if it works out, schools might go into the serving of pre-cooked foods in a much bigger way.

**AN OUTDOOR ICE RINK** for the recent Baghdad (India) Trade Fair posed more than the usual problems, we learn. Temperatures of 120 F occur practically every year in Baghdad, and although by Fair time the hottest weather had usually passed, it wasn't certain — so the rink had to be indoors. This involved air conditioning also, since temperature of the ice had to be kept at around 20 F and inside-building temperature at around 85 F. There was also the problem of fog and condensation, but J. and E. Hall Ltd. of Dartford solved the problems. The air conditioning plant consists of a 4-cylinder V-block compressor with horizontal shell-and-tube condenser and direct expansion finned type air cooling unit, plus two banks of filters. Return air from the air conditioning system is by means of underground ducts.



**FROM "DEAD" TO "LIVE" DISPLAYS** of his equipment is just a few steps for Barney Tillman, veteran Arizona refrigeration dealer, who shares a business building with one of his food market customers. Here Tillman talks to the skeptical wife of a prospect in his own showroom, then clinches the sale by showing her the equipment in actual operation.



## *a few steps to sure sales*

A little more than a year ago, Barney Tillman, veteran Arizona refrigeration contractor and head of Phoenix Market Equipment Co., completed a deal which made his landlord a "working partner" in his commercial refrigeration sales business. Here's how it came about.

It all started when Tillman sold Henry Long, owner of the Shopping Bag Super Market in Phoenix some \$35,000 worth of refrigerated equipment — self-service

display cases, reach-ins, and a walk-in—for meats, produce, dairy products, and frozen foods. During the installation, Tillman, who already was dissatisfied with his current showroom location, noted that at the rear of the supermarket was adequate space for a commercial refrigeration showroom, service department, and sales office.

Immediately recognizing the potentials of such a location, contractor Tillman promptly proceeded to work out an arrangement where-

by supermarket operator Long became his landlord, the lease carrying with it the privilege of using Long's busy market for "active demonstrations" of Tillman's complete Friedrich line of refrigerated fixtures.

This unique location has led to an unusual type of selling for Tillman.

"Now we are only a few steps away from an actual working display of beautifully kept refrigeration which is in constant use in

this busy supermarket," he points out.

"Thus, when a prospect appears the least bit skeptical over the increase in sales, the appearance, operating costs, or any other factors which we utilize as sales points for our equipment, it is a simple matter to escort this potential purchaser out of our own showroom, down the sidewalk about 50 feet, and into the supermarket where he can see Long's \$35,000 installation in actual use."

### Cooperation Is Key

Tillman cooperates closely with the supermarket operator in keeping all of the refrigerated equipment in glistening condition at all times. For example, Tillman or his employees cheerfully lend a hand in setting up elaborate displays of produce or other perishables whenever special sales are scheduled in Long's market.

On the other hand, Long cooperates with Tillman to the fullest possible extent through the installation of colorful posters and various types of display case trimmings which lend a lot of additional eye appeal to the fixtures.

### Operating Records Used

Needless to say, through this type of close cooperation each man's interests are furthered.

Often, when a proposed sale is not going so smoothly, Tillman simply turns the prospect over to the grocer, who keeps available complete records on operating costs of his refrigeration equipment, the initial investment which it required, comparative food sales before and after installation, and similar pertinent data. "We reason that if the grocer who is the prospect can't be convinced by the grocer who is a customer that there is very little possibility of making the sale," Tillman explains.

"Naturally," he says, "we try to arrange things so that it isn't necessary to call upon Long too frequently for his assistance. Whenever we reach an impasse in a sales pitch, however, he is always there as our 'ace in the hole'. A



**DAY-TO-DAY PLANNING** of service calls for most practical routing over a large territory is made possible by these wall-mounted clip boards.

## Planned Service Pays

**W**HEN A refrigeration service organization must cover long distances, it pays to lay out each week's work on an "advance schedule" so far as is practicable, according to Don Huntress, head of Ace O'Hara, Phoenix, Ariz.

The O'hara Co., designers and installers of custom refrigeration for industrial and commercial users, has found it necessary to cover almost the entire sprawling State of Arizona, with distances of 200 miles nothing unusual. Consequently, service calls must be carefully scheduled for the firm's four refrigeration mechanics, so as to incorporate the largest number of calls per 100 miles traveled, and to eliminate wasted time.

That's the purpose of the seven-unit dispatch board which occupies one wall of the firm's dispatcher's office building. Stainless steel clip boards are spaced along this board arranged in sequence for each day of the week for future calls, and for out of town trips.

A full time dispatcher maintains a complete case history file on every installation. This file is both alphabetized and divided into sections of the state. Thus, when emergency calls come in for repairs out in remote Arizona communities, every detail on each job can be swiftly checked, and pertinent facts placed on the work order ticket which is posted in the appropriate place on the call board.

If distances of more than 25 miles are involved, every attempt is made to set up a definite appointment a day or two in the future, specifying a time at which the customer will be available to admit the serviceman and lend a hand. Often, calls are scheduled as much as one week ahead to permit the company to "juggle" its total service load so that one truck can make calls in, for example, a 150 mile circuit trip.

Each sheet, as posted for the specific day on which repairs are to be made, is identified with a symbol for the appropriate mechanic. In addition, the extracted information on the installation is clipped to the work order, as are any special remarks, such as "slow pay" or "needs larger compressor", which the service mechanic can put to effective use.

"Through long experience," Huntress explains, "we can allot just about the correct amount of time for each repair job and schedule our appointments accordingly, even if one call is a display box in a super market in one community and the next an ice machine in a drugstore in another town 25 miles distant. The important point is to fit such calls as closely as possible into the allotted number of hours per week."

*Continued on page 53*



"REDUCED PLANT REPLACEMENTS BY 90%", boasts L.P. Akenhead (right), director of the Commercial Enterprises, Inc., nursery, of the firm's 680,160 cu. ft. of refrigerated storage space. Pointing out features of the job is LaPrade Sloan of Mechanical Air Inc., the contractor who installed it.

# 5 MILLION "SLEEPING BEAUTIES"

by H. J. Dyminski  
Genesee Refrigeration Supplies, Inc.  
Rochester, N. Y.

*. . . that's an apt description of the huge plant stock being retarded by refrigeration in this one large nursery.*

THAT refrigeration equipment has become an important partner in the nursery business is evidenced by the growth-record of Commercial Enterprises, Inc., of Newark, N. Y., the world's largest distributor of nursery stock handling over 10 million plants a year. Here, the growth of the company itself and of its uses of refrigerated storage facilities has progressed virtually hand in hand.

Since the company installed its first modest size cooler back in 1944, the use of refrigeration equipment has grown to the point where Commercial Enter-



prises now employs a total of 680,160 cu. ft. of refrigerated storage space today. The company's newest cooler space, recently installed, measures 156' x 60' x 16' high, to bring the total to the boxcar-number figures cited above.

Experience of Commercial Enterprises with the value of properly refrigerated storage for the millions of plants it ships annually points up, on a magnified scale, a major market in various sections of the country among wholesale nurseries of all sizes.

Lester P. Akenhead, managing director of plant production, visualizes the addition of more refrigerated cooler space in almost direct proportion to the company's constant growth. Approximately 5,000,000 plants, one-half the present yearly volume, are subjected to refrigeration.

Which plants should be kept under refrigeration, and at what temperatures and humidities the various types of plants are handled most efficiently, have been determined by Akenhead along with the company's research department. Some plants, it has been found, should not be refrigerated at all — and constant experiments are made to determine the optimum storage conditions for the hundreds of varieties of plants in the Commercial Enterprise collection of growing plants.

Basically, the job of the refrigeration equipment is to permit the plants to be kept in the dormant, or "resting" stage under control, until the time is right from both a quality and demand standpoint to bring the best prices and the most brisk sales.

Use of refrigerated coolers permits the plants to be picked when they are entering their dormant stage, at the company's discretion to best utilize their pickers' time. After being placed in the cooler, the plants are kept there for the entire dormant stage, and beyond, as necessary. During this storage period, the plants are inventoried and cataloged.

The sales department is advised accordingly, to allow plans to be prepared for selling the plants. Shipment is determined by the best planting time of the region into which the plants are to be shipped. The company's meteorological department advises on this through a constant watch of weather conditions on a national basis. This latter is a little thought-of but most important factor in the company's sales and marketing program — because it makes as certain as possible that the buyer doesn't get the plant at a time when the weather is too inclement to allow it to be planted.

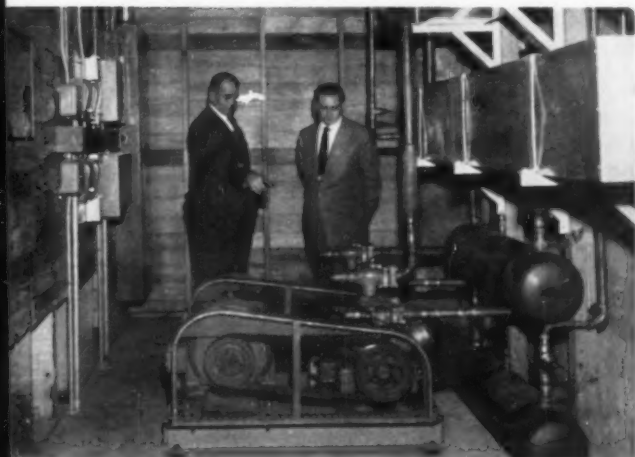
Refrigeration here permits the plants to be kept in the dormant stage longer, until the weather conditions in the region to which it is going are just right. Refrigerated railway express cars and refrigerated trucks are used extensively in shipment, to keep the plants dormant until they reach their destination. This does not allow the plant to start "waking up" under unfavorable growing conditions while in transit.

As can readily be seen, every precaution is taken to assure the buyer that the plant he purchases is not only of the finest quality, but that it is also afforded every possible precaution to proper growth after he has planted it on his property.

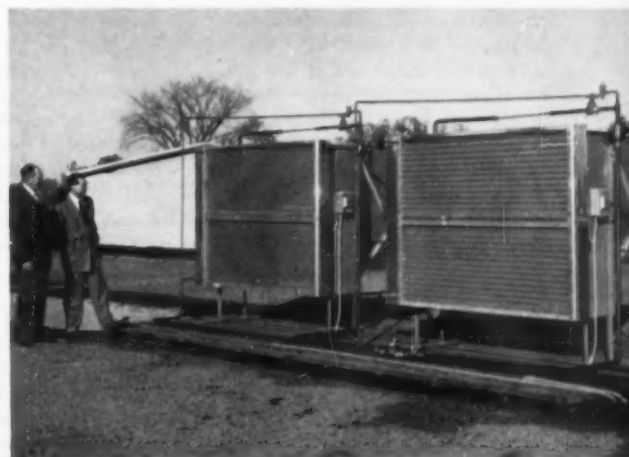
Some of the benefits realized by the company through its extensive use of refrigeration equipment are:

1. Plant replacements have been reduced by approximately 90%. This represents a substantial saving, and by itself would justify the cost of refrigeration.
2. Rush periods of picking, shipping etc. have been reduced and consequent excessive labor costs have been minimized.
3. Customer satisfaction is virtually assured. The plant he purchases will grow — and this encourages him to plant more.

*Continued on page 120*



**RUSH PERIODS** of picking and shipping were reduced, and labor costs minimized, as a result of the retarded plant growth made possible by the carefully planned refrigeration system powered by these two Carrier condensing units.



**WATER SUPPLY PROBLEMS** have been alleviated at the Commercial Enterprises nursery through installation of these two Kramer air cooled condensers. Limitations on equipment location made water conservation equipment a "must".



● **CRYSTAL-CLEAR ICE CUBES** being scooped up by this waitress have solved a weighty problem for some northern Ohio restaurant owners, and have proved to at least one commercial refrigeration dealer that he can make . . .

## Profits from Dirty Glasses



Probably W. H. Carrier was as surprised as anyone when he heard one of the restaurant owners in his territory declare one day that he was losing business because he had dirty water glasses—and that it wasn't because he didn't wash them, either.

Carrier, who heads up Carrier Refrigeration Co., Mansfield, Ohio, had heard of a good many reasons why people didn't eat at one place or another—the term “greasy spoon”, he knew, is often used to describe an undesirable sort of eating establishment—but this was his first encounter with the “dirty glasses” reason. Besides, this particular restaurant wasn't one of the “greasy spoon” variety at all, but one of the better-class places right in the middle of the Lake Erie resort area.

After investigation, Carrier found that this particular restaurant wasn't by any means the only one afflicted with the “dirty glass” problem. It was fairly common, he discovered, among eating places in a number of Ohio cities along the Lake Erie shore west of Cleveland.

Buttoned down, the problem was this—all of the restaurants, taverns and drug stores that experienced the trouble with off-color drinking glasses were buying commercially-made ice cubes from the same source. What was happening, apparently was that the water wasn't being allowed to settle sufficiently before it was frozen into ice. Result was that the algae and other sediment in the water gradually accumulated on the glasses in which the water was served, and these became discolored. Customers thought that the discoloration was the result of careless glass-washing, when this wasn't the case at all.

From the smaller cities along the lake, or near Bucyrus, where he sold to a motel (because the river water there did the same thing), Carrier sold over 22 ice cubers.

The main reason why the users of automatic ice makers don't have the same problem as with ice cubes purchased commercially is that the water goes into the syphon interchange of the chamber in the automatic unit where it settles and is pre-cooled for 25 minutes or more,

at 38 F. In this way, all the algae in the water settles into the chamber. Usually, the chamber is cleaned about every two weeks by a flush-clean rinsing, so that the machines will always produce good pure ice.

Most of the firms had been using about 50 lbs. of ice a day. With the ice cube maker, for each 250 lbs. of ice they save \$1.13, and on 200 lbs. they save 90 cents, so if they use ice 300 days a year, the equipment would pay for itself in less than five years.

After using the machine for a short time, most of the restaurant owners found that they saved over 80% on ice bills. Using this sales approach, Carrier found that he didn't have to sell with emphasis on the seasonal need for ice. All you need when you have an automatic ice cube maker prospect in a “muddy water” area is to show him that the soil on glasses is from the algae in the ice—and can be eliminated. Actually, the algae isn't distasteful or harmful in anyway—it is just something a customer finds not to his liking. And the owner loses business fast!

WATCH THE G-E PACKAGED AIR CONDITIONER **SALES SCOREBOARD!**

G-E Dealers Score Every Time

with

5

Finance  
Plans

**Most thorough financing coverage keeps capital free... PROFITS HIGH!**

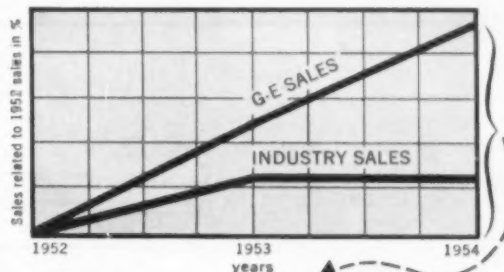
General Electric distributors offer dealers not one—but five big finance plans! Two that make it easy for any prospect to own a G-E Packaged Air Conditioner... three that help dealers carry adequate stock and free up valuable working capital. Just look over these easy terms—they mean *easy sales*! Investigate these five G-E Finance Plans now—more reasons why G-E Dealers have greater profit opportunities.

- 1 Easy Payment Plan**—if customer is low on cash, he puts 10% down, takes up to 36 months to pay!
- 2 Skip Payment Plan**—purchaser puts only 10% down as early as first week in October... makes first low monthly payment following May 1st! Up to 36 months to pay! Ideal plan for getting more fall and winter sales!
- 3 Dealer Inventory Financing**—carry G-E units on your floor or in warehouse of your choice until July 1st. You invest only 10% of purchase cost!
- 4 Warehousing Plan**—a big cost saver, and amazingly simple! Get details from your G-E Distributor.
- 5 Work-In-Process Finance Plan**—G.E. pays your equipment cost when your customer signs the order and the balance of selling price when installation is completed. Your working capital grows... your credit remains good—at amazingly low charges!

SEE the outstanding line of  
G-E Packaged Air Conditioners at the 12th  
**INTERNATIONAL HEATING & VENTILATING EXPOSITION**  
Booth C-113 • Convention Hall, Philadelphia, Pa. • Jan. 24-28

**GET ON THE WINNING TEAM!**

Compare G-E sales growth with that of the entire industry... and get the facts now on how teamwork between G.E., its distributors, and its dealers makes this growth possible!



**G-E Sales Growing Faster Than Industry!**  
... and here are more reasons why:

**G-E Advertising:** Year-round campaigns in leading national magazines! Strong local advertising! Hard-hitting direct mail! Special promotions of every sort!

**G-E Saleability:** Dozens of exclusive engineering features plus an unmatched five-year warranty protecting entire refrigeration cycle!

**G-E Multiple Sales:** G.E. dealers get large installations! All installations are handled by franchised distribution.

For full information call your nearest G-E Distributor or write: C. J. Rigby, General Electric Co., Commercial and Industrial Air Conditioning Dept., 5 Lawrence St., Bloomfield, N. J.

*Progress Is Our Most Important Product*

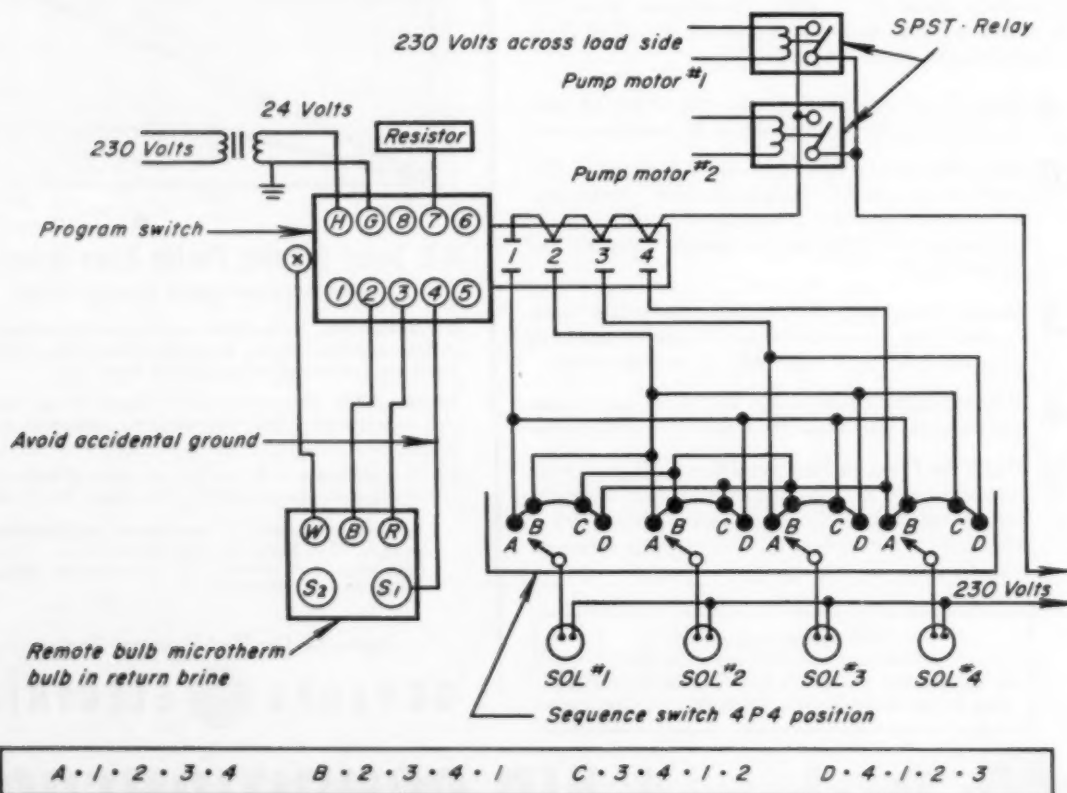
GENERAL  ELECTRIC



**Packaged AIR CONDITIONERS**

# CONTROL OF LOAD VARIATION

*How can you keep operating costs of a refrigeration system at a minimum in applications where the cooling load may vary all the way from 25% up to 100%, depending upon operating conditions? Here's the ingenious answer provided by one contractor through a simple 4-step control system*



**BRINE TEMPERATURE CONTROL SCHEME**

# in Outdoor Ice Rink Installations

**I**N planning the construction of a mechanically refrigerated outdoor ice skating rink, it is extremely important to keep in mind the fact that the load on the refrigerating system may vary from 25% up to 100% of total capacity, due to the changing weather during the skating season. To keep operating costs at a minimum, the refrigerating system for such a rink must be provided with some sort of a control system which will compensate for these load changes with no appreciable loss of refrigerating efficiency.

Just such a system was installed by Harold J. Ackerman of Ackerman Refrigeration Co. for the Chandler Park ice skating rink operated by the Department of Parks and Recreation in the city of Detroit, Mich. This system actually operates with four steps of control at peak efficiency.

Aiding in the design of this system by revamping the original specifications and doing the necessary field engineering work was the Detroit branch of J. George Fischer & Sons, Inc., wholesaler of refrigeration and air conditioning equipment and supplies, under the direction of E. S. Jones, manager.

Continuous operation of the Chandler Park rink is planned from December 1 to April 1 each year. The skating area itself measures 85 x 145', and the ice field is frozen over a grid of plastic pipe through which a calcium chloride brine solution is circulated.

To chill this brine solution, an F-22 refrigeration

system utilizing four 30-hp Brunner compressors was installed. These were coupled with two 20' x 10' Acme "Dri-X" chillers. Each of these chillers has a split circuit, which has the effect of creating a total of four circuits, as far as the refrigeration system is concerned.

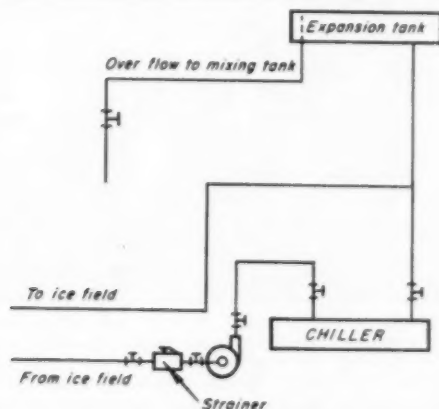
By placing the condensers on top of the chillers, it was found that it would be possible to operate the system with only 90 lbs. of refrigerant for each 30-hp section of the system. This feature alone saves a considerable amount on refrigerant cost.

Two 10-hp 4 x 5 Kerr-Aurora pumps were installed to pump the calcium chloride brine from the ice field to the chillers and back again.

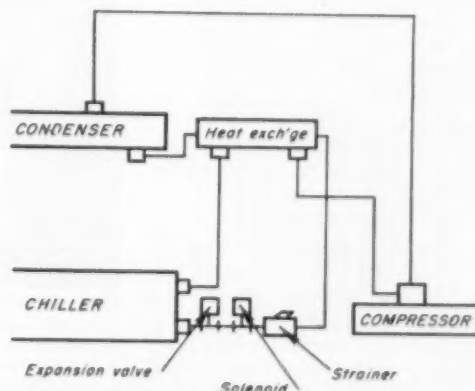
The ingenious control system which provides the 4-step operation embodies no unloaders and no capacity control. It simply provides a means of starting and stopping each of the four machines at the proper time, according to the existing weather conditions.

In actual operation, a Barber-Colman thermostatic control activates a proportional damper motor with four switches arranged in such a way that they stop and start the compressors in sequence. This 4-step control is set up so that no two compressors will start at the same time.

By using the four separate compressors in conjunction with the type of control system outlined, it is possible for the system to operate at 25, 50, 75, or 100% of capacity as the weather conditions require, with no loss of refrigerating efficiency.



BRINE PIPING SCHEME



REFRIGERANT PIPING SCHEME

# COMMERCIAL *Refrigerator* SALES NEWS

## Air Conditioning Offers Five Major Benefits To Food Markets

*A condensation of an address presented by Robert Hughes, assistant sales manager, air conditioning and refrigeration division, Worthington Corp., at the 8th annual convention of the National Commercial Refrigerator Sales Association.*

**W**HAT benefits does the food store get from air conditioning it installs? Obviously, benefit number one must be *profit* when you are talking to any business man — but this in itself can be broken down into many categories.

The first benefit is the fact that more customers are attracted to the air conditioned store as against its non-air-conditioned competitor. One large supermarket operator told me recently that I would be surprised how many actual letters they get from shoppers in areas where their stores are not air conditioned, saying that people like to trade with them but won't until they air condition the store like the competitor down the street. This is an extremely important factor and one of the major reasons why food stores install air conditioning.

The second reason is that a large part of supermarket volume, no one knows just how much, is the direct result of impulse sales. If the store is attractive and comfortable, Mrs. Housewife will tend to stay there longer. The longer she stays, the more impulses she has and the more she buys.

Point number three in the benefits of air conditioning seems to be the very important one of the lengthening of shelf life of perishables, particularly candies, bakery goods and fresh vegetables. While

many markets use ice on their fresh vegetables, air conditioning is beneficial, if only from the standpoint of lowering the consumption of ice.

A side benefit under this same heading is the improvement in the quality of perishables during their shelf life. This increases the customer's satisfaction with the store, resulting in repeat business.

The fourth benefit in the order of importance is employee efficiency and reduction of employee turnover. It seems to me, and the supermarket people concur, that the fact the store is air conditioned does not attract more prospective employees. However, it does create a happy employee, which is a substantial factor in the reduction of employee turnover.

In addition to this, the fatigue factor is well known in relation to air conditioned working space. Without question this produces more work per dollar spent than in the un-air-conditioned store.

Under this general heading an additional, though rather intangible, benefit is the psychological factor in the employee's relations with the shopper. When the clerk is comfortable and happy, he is more courteous and friendly to the customer — result, more sales.

The fifth benefit of air conditioning is that the reduction in ambient temperatures of the areas in which refrigerated displays are located has resulted in a substantial and noticeable reduction in the operating cost of this refrigeration equipment. This benefit is particularly true if the display cases are cooled by means of remotely located or water cooled compressors which do not discharge heated air to the air conditioned space.

These are the five major benefits that the modern food store gets from air conditioning. There are, however, several less important benefits which you should consider in building your sales story.

One is the prestige angle. This is certainly much more important in the small store than the supermarket, but there most assuredly is such a sales impulse. "Joe's Delicatessen in the next block is air conditioned so to keep up with

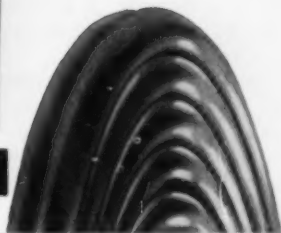
### LEAD COMMERCIAL DEALER GROUP FOR 1955



**NEW OFFICERS AND DIRECTORS** of the National Commercial Refrigerator Sales Association were elected at that group's 8th annual convention held in New York City. Seated (left to right) are: S. W. Davis, Jr., 1st vice president; S. G. Taylor, 2nd vice president; George F. Wiedemer, president; Marie H. Lawton, executive secretary; Harry A. Hattenbach, treasurer. Standing (left to right) are directors Sherman W. Bushnell, F. W. Owen, George Schoenbacher, Milton I. Schwartz, Donald D. Denny, and R. H. Winther. Owen and Schoenbacher are newly elected to the board. Another new director, Joseph S. Lipack, and two other continuing directors, Paul Allen and Dudley M. Cawthon, were not present when the picture was taken.



# HANDY!



CUTTING OFF



REAMING & BURRING



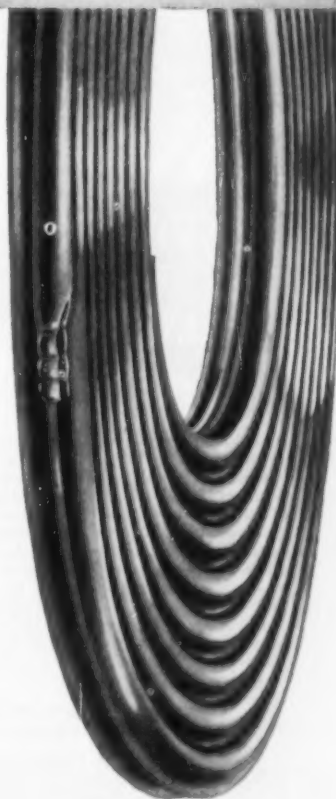
FLARING

**CHASE®** COPPER REFRIGERATION TUBE comes in handy, 50-foot lengths, coiled flat in two layers. It handles easily, stores conveniently.

*Chase* refrigeration tube has a bright *uniformly soft anneal*, can be bent and flared quickly and easily, does a better job.

The ends of *Chase* Refrigeration Tube are crimp-sealed...are the *same* diameter as the tube itself, so the tube needn't be cut to pass through small openings. Result: Dirt and moisture stay out, the tube stays dry and oxide-free, you get a *cleaner* installation.

Your Chase Wholesaler has a complete stock of Chase Copper Refrigeration Tube and Solder-Joint Fittings. Contact him when you plan your next job.



# Chase

BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass & Copper (tubes office only)

Albany?	Chicago	Denver	Indianapolis	Minneapolis	Philadelphia	St. Louis
Atlanta	Cincinnati	Detroit	Kansas City, Mo.	Newark	Pittsburgh	San Francisco
Baltimore	Cleveland	Grand Rapids?	Los Angeles	New Orleans	Providence	Seattle
Boston	Dallas	Houston	Milwaukee	New York	Rochester?	Waterbury

and AIR CONDITIONING • Circle No. 32 on Reader Service Card  
JANUARY, 1955

Joe I need air conditioning too."

In city after city it has been our experience that when about 15% of the prime office space is air conditioned then it becomes imperative that the other 85% buy air conditioning. I believe that you will find the same situation in the food store field.

Another very definite benefit of air conditioning is cleanliness. Not only is cleanliness, particularly in a food store, of a psychological benefit, but it is a mighty high-cost maintenance item, too. The cleanliness resulting from filtered air reduces the necessity for janitor services and the costs of cleaning supplies.

Let's spend just a minute with the small store owner who is an important part of our market. Most of the above benefits are equally applicable to him, but I believe that in his case there is one very important additional benefit to be considered.

In general, the small store is owner-operated and Mr. Store Owner spends a large portion of his life working in his store. One

point to emphasize with these people is their own personal comfort during their working hours. I feel this is an extremely effective sales tool and one which should be emphasized.

These, then, are the prime benefits which air conditioning offers to the food store. And no matter how much experience you may have as a salesman, you never know what particular point will close a sale. The only way to be sure you have done your selling job to the best of your ability is to hit every one of these points on every sales call.

### COLDIN WINS ACCIDENT REDUCTION AWARD

Leon P. Krause, vice president of Coldin Cabinet Co., Inc., New York City, has announced that his firm won the 1954 award for "no lost time due to accidents", sponsored by the New York State Insurance Fund. A plaque commending the achievement has been presented to Coldin Cabinet.

### 1300 ATTEND ARI-RSES MINNEAPOLIS MEETING

Every section of the country was represented by the 1,300 people who attended the educational conference and exhibits of the Air-Conditioning and Refrigeration Institute at Minneapolis on Nov. 18-20. The 17th annual convention of Refrigeration Service Engineers Society was held in conjunction with the conference in the Minneapolis Auditorium.

Seventy-seven manufacturers in all lines of air-conditioning and refrigeration equipment and service provided educational displays.

A new feature of this educational conference was the display of two air-conditioned automobiles — a 1955 Chrysler New Yorker and a 1954 Nash Ambassador. These proved to be one of the most interesting exhibits as factory experts from both companies answered the many questions of those in attendance.

Educational talks, sponsored by RSES, were scheduled from 9 to noon and 1 to 3 p.m. on each of the three days with exhibits, spon-

## ASPIR-JET THE EFFICIENT SPRAY NOZZLE



This new plastic spray nozzle has rapidly gained the preference of atmospheric cooling tower manufacturers and air conditioning contractors in the southwest. The unique Aspir-Jet design assures increased water break-up and distribution with nozzle pressures as low as one-half pound.

The butyrate plastic used to make Aspir-Jets does not corrode, and a year's usage left no indication of erosion. For improved atmospheric cooling tower efficiency, and longer nozzle life... switch to Aspir-Jets! Made in three sizes — 3, 5 and 7 gallon per minute capacity.

- Available through Refrigeration and Air Conditioning wholesalers.

**Manufacturers & Refrigeration Wholesalers:**  
if you are not now using or stocking this astounding new product, wire or write

## THERMAL AGENCY

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## BEVERAGE SALES DOUBLED!

**Thanks to  
Pinnacle  
WALL TYPE  
BEVERAGE  
CASE!**



This is not uncommon, for wherever a Pinnacle Wall Type Beverage Case is installed, sales immediately climb! But don't take our word for it — drop us a line and we'll refer you to users who actually doubled their beverage sales! Every Store, Hotel, Restaurant, Tap Room, a customer for you, Mr. Dealer!

Quality made throughout, the Pinnacle Wall Type Beverage Case is available in either gleaming white life-time Porcelain or Stainless Steel.

Model WB526 (pictured here) is 6-feet wide; 78" high, and 30" deep with four sliding doors. Has 50 sq. ft. of shelf area and will hold 48 cases of 12 ounce bottles. Eight and ten foot models have 8 sliding doors and will hold 67 and 85 cases respectively. Cooling system — ceiling hung forced air evaporators. Remember — it's Pinnacle for economical, trouble-free service!

A few Pinnacle Territory Franchises are still available. Wire or write today for full information and illustrated literature!

**Pinnacle**  
EQUIPMENT CORPORATION  
FLEETWOOD, PENNSYLVANIA  
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sored by ARI, open from 3 to 6 and 7 to 10 p.m.

The next ARI educational conference will be held in Atlanta on March 17, 18 and 19.

# **PENN PREVIEWS NEW "CONTROLORAMA" SHOW**

"Controlorama," the all-new educational control show that Penn Controls, Inc. has developed for showings beginning late in February to heating, air conditioning and refrigeration engineers and servicemen, was premiered recently for more than 400 guests at Hotel Oliver in South Bend, Ind. The preview was designed to try out what general sales manager R. H. Luscombe termed a unique concept in automatic control shows before it hits the road to play some 40 cities over much of the nation.

Reaction to the "Controlorama" presentation was analyzed for possible improvements before the show goes on its spring tour. Thirteen South Bend, Mishawaka, Elkhart and Goshen wholesalers helped sponsor the South Bend preview by issuing special invitations to the trade in that area.

"Live" demonstrators operating residential heating, air conditioning and refrigeration systems in simulated operation, and a new idea in visual aids to supplement animated charts and giant operating controls are some of the new features of the new Penn Controls show. Another new feature is that the cooling and heating shows have been combined for showing at one time. In past shows, the cooling show was presented on one night and the heating show on another. To make this possible, the new starting time for all shows has been moved up to 5:30 p.m.

Servicemen will thus be able to come to the shows immediately after working hours, instead of having to go home, change clothes, and come back as in the past. The new arrangement also will allow more question-and-answer time, Luscombe said. Proposed schedule of "Controlorama" meetings for the spring of 1955 includes:

Monday, Feb. 28, Huntington, W. Va.; Tuesday, Mar. 1, Charleston, W. Va.; Wednesday, Mar. 2, Roanoke, Va.; Friday, Mar. 4,

Washington, D. C.; Monday, Mar. 7, Richmond, Va.; Wednesday, Mar. 9, Norfolk, Va.; Friday, Mar. 11, Raleigh, N. C.; Monday, Mar. 14, Greensboro, N. C.; Wednesday, Mar. 16, Charlotte, N. C.; Friday, Mar. 18, Columbia, S. C.; Monday, Mar. 21, Charleston, S. C.; Wednesday, Mar. 23, Savannah, Ga.; Friday, Mar. 25, Jacksonville, Fla.; Monday, Mar. 28, Orlando, Fla.; Wednesday, Mar. 30, Miami Fla.

Friday, Apr. 1, Tampa, Fla.; Monday, Apr. 4, New Orleans,

La.; Wednesday, Apr. 6, Beaumont, Tex.; Thursday, Apr. 7, Houston, Tex.; Friday, Apr. 8, Corpus Christi, Tex.; Monday, Apr. 11, San Antonio, Tex.; Tuesday, Apr. 12, Austin, Tex.; Thursday, Apr. 14, Shreveport, La.; Monday, Apr. 18, Dallas, Tex.; Tuesday, Apr. 19, Fort Worth, Tex.; Thursday, Apr. 21, Amarillo, Tex.; Monday, Apr. 25, Oklahoma City, Okla.; Wednesday, Apr. 27, Little Rock, Ark.; Friday, Apr. 29, Tulsa, Okla. Monday, May 2, Wichita, Kans.; Wednesday, May 4, Kansas City,

## **No notching needed on rounded corners ...**

because Jarow's "Curvall" rubber gasket shapes itself smoothly and easily to the late model boxes with the curved doors. Gives a "factory" appearance in half the time with half the effort!

New "Curvall" Series 1400 was engineered by Jarow to do the same job at much less cost than the pre-formed frame gasket you used to have to get from the box manufacturer. Start saving time and money. "Curvall" is available now at your wholesaler!

"Curvall" comes in 11 sizes for universal application.

## **Mr. Wholesaler:**

Be sure you're well stocked with the new "Curvall" gaskets ... because your customers will be calling for them. This addition to the well known Jarow line was created to meet the gasket replacement demand on late model boxes.

**write us today!**

Mo.; Friday, May 6, St. Louis, Mo.; Monday, May 9, Evansville, Ind.; Wednesday, May 11, Louisville, Ky.; Friday, May 13, Cincinnati, Ohio; Monday, May 16, Dayton, Ohio; Tuesday, May 17, Columbus, Ohio; Thursday, May 19, Toledo, Ohio; Monday, May 23, Detroit, Mich.; Tuesday, May 24, Saginaw, Mich.; Wednesday, May 25, Jackson, Mich.; Thursday, May 26, Grand Rapids, Mich.

### RELIANCE OPENS FACTORY BRANCH IN MILWAUKEE

A direct factory sales office for Reliance Electric & Engineering Co. is being opened in Milwaukee and Vernon S. Barnes is appointed branch manager there.

From the new office, which is located at 5856 North Port Washington Road, Barnes will render engineering and technical service on Reliance a-c. and d-c. motors, motor drives, controls and related power equipment throughout the large industrial area in Milwaukee and neighboring cities.

### SWAN SONG



**LAST SHOW** as an active member of the industry was the recent Minneapolis ARI-RSES conference for E. E. Graf, sales manager of Ranco, Inc., who has announced his retirement. Shown with him here (right) is James Manecki, who will succeed him.

**BUY FROM YOUR REFRIGERATION WHOLESALER**

### ASRE MEMBERS VOTE AGAINST NAME CHANGE

Members of the American Society of Refrigerating Engineers voted overwhelmingly against adding "air conditioning" to the organization's name, it was revealed at the 50th annual meeting in Philadelphia Nov. 28-Dec. 1.

Only 764 members voted in favor of the name change, while 1,445 members voted against it. To have passed, the measure would have required a majority "for" vote of the 5,498 members entitled to ballot on the proposal.

Members did approve other constitutional changes, which raise membership standards and shift elections and the annual meeting from year-end to mid-year.

### CONNOR PLANT GROWS

Connor Engineering Corp., Danbury, Conn., manufacturer of ceiling air diffusers and air purification equipment, is enlarging its production facilities by a 20,000 sq. ft. plant addition.

## NOW... INTRODUCING NEW UNIFLOW ALL-ALUMINUM WALK-IN COOLERS and WALK-IN FREEZERS



### UNIFLOW FEATURES

- ★ Heavy gauge tempered aluminum—inside and out.
- ★ Semi-rigid fiberglass sealed to lining. Highest insulating value.
- ★ Rounded corners offer extra beauty and streamlined appearance.
- ★ Concealed door hinges.
- ★ Standard size sections may be added any time.
- ★ Tie-rod construction throughout; no cover plates to mar interior beauty.

Write for full information on the most complete line of walk-in coolers/freezers in the industry. We will be pleased to send you our Dealer "Extra Profits" Brochure. Address your request to THOMAS A. MARTIN, Sales Manager.

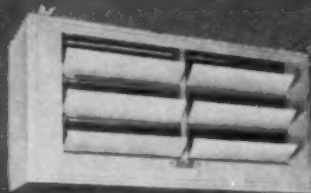


**UNIFLOW MANUFACTURING COMPANY**

**EAST LAKE ROAD, ERIE, PENNSYLVANIA**

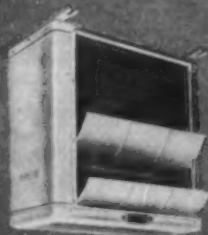
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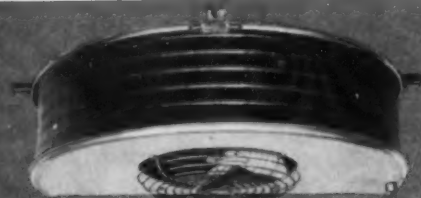
**COOLMASTER**

10,000 to 60,000  
BTU/HR



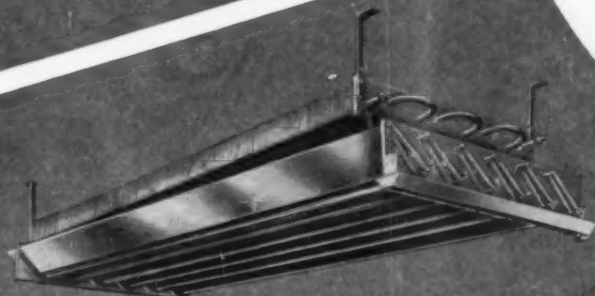
**KAY-TEE**

2,500 to 12,000  
BTU/HR



**LARGE CURVETTE**

3,000 to 20,000  
BTU/HR



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STOCK SIZES for  
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# CONTRACTORS

NEWS • ACTIVITIES • PLANS

## New RACCA Officers To Continue Expanded Program Under Palen

AT the 9th annual convention of the Refrigeration and Air Conditioning Contractors Association held at the diLido Hotel, Miami Beach, Fla., Dec. 2, 3 and 4, 1954 the following officers and directors were elected to guide the association in its progress during 1955:

A. M. Palen, St. Paul, president; Dudley M. Cawthon, Miami, vice president; Ernest W. Farr, Jr., Cleveland, second vice president; Wm. J. Schemers, Detroit, recording secretary; Harvey W. Hotell, Washington, D. C., treasurer; B. C. McCall, Chattanooga, Tenn., sergeant-at-arms.

Named as directors for the coming year were. Lee J. Quinn, Cincinnati; Wm. D. Moody, Houston; Paul B. Hughes, Jersey City; Jos. A. Marchase, Pittsburgh; M. Becklein, Kansas City; Harvey O. Miller, Chicago.

Harvey Miller, chairman of the nominating committee, advises that all officers and directors are selected to give representation geographically through substantial contractors who have and are contributing much to the progress of the air conditioning and refrigeration industry.

The new board of directors immediately set out to continue the expansion of activities and programs that the air conditioning and refrigeration public be fully protected in this rapid expansion of the industry which they believe has become a definite public enthusiasm.

Ray Kromer was unanimously re-elected as the executive vice president and general manager of the organization. Executive offices

of the Association are located at 10660 Carnegie Ave., Cleveland.

According to Ray Kromer a new group of local chapters officially were voted membership in the National Association during the convention. The local chapters who affiliated during the past three months are New York, New Jersey State Association, Tampa, Fla., Houston, Tex., Seattle, Wash., Montana State Association and Kansas City, Mo. This materially increases the representation as previously covering 24 local associations and individual members in each state.

### RACCA VOTES IN 7 NEW MEMBER GROUPS

By unanimous vote contractors in two state and five local contractor organizations were accepted for membership at the 9th annual convention of the Refrigeration and Air Conditioning Contractors Association by the officers and directors.

The following contractors were accepted from New Jersey:

Bader's Sales & Service, Inc., Highland Park; Charters Refrigeration & Air Conditioning Co., Westfield; Conditioning Co., Inc., Newark; Dietl & Kraft, Newark; William P. Emley & Son, West Long Branch; Fortune Refrigeration Co., Jersey City; Geiger Air Conditioning & Refrigeration, Inc., Irvington; Ernest Haupt, West Englewood; Merit Refrigeration Service, Jersey City; National Refrigeration Service Co., East Orange.

Refrigeration Maintenance Co., Irvington; Richardson & Richard-

son, Inc., Nutley; Trenton Refrigeration, Inc., Trenton; Fogel — New Jersey — Sales, Inc., East Orange; Bergen Passaic Service, Inc., Allendale; Cleworth Refrigeration, Elizabeth; DeSesa Engineering Co., Newark; Electric Products, Inc., Jersey City; Filippone Refrigeration Co., Jersey City; and C. W. Fricke Co., Rutherford.

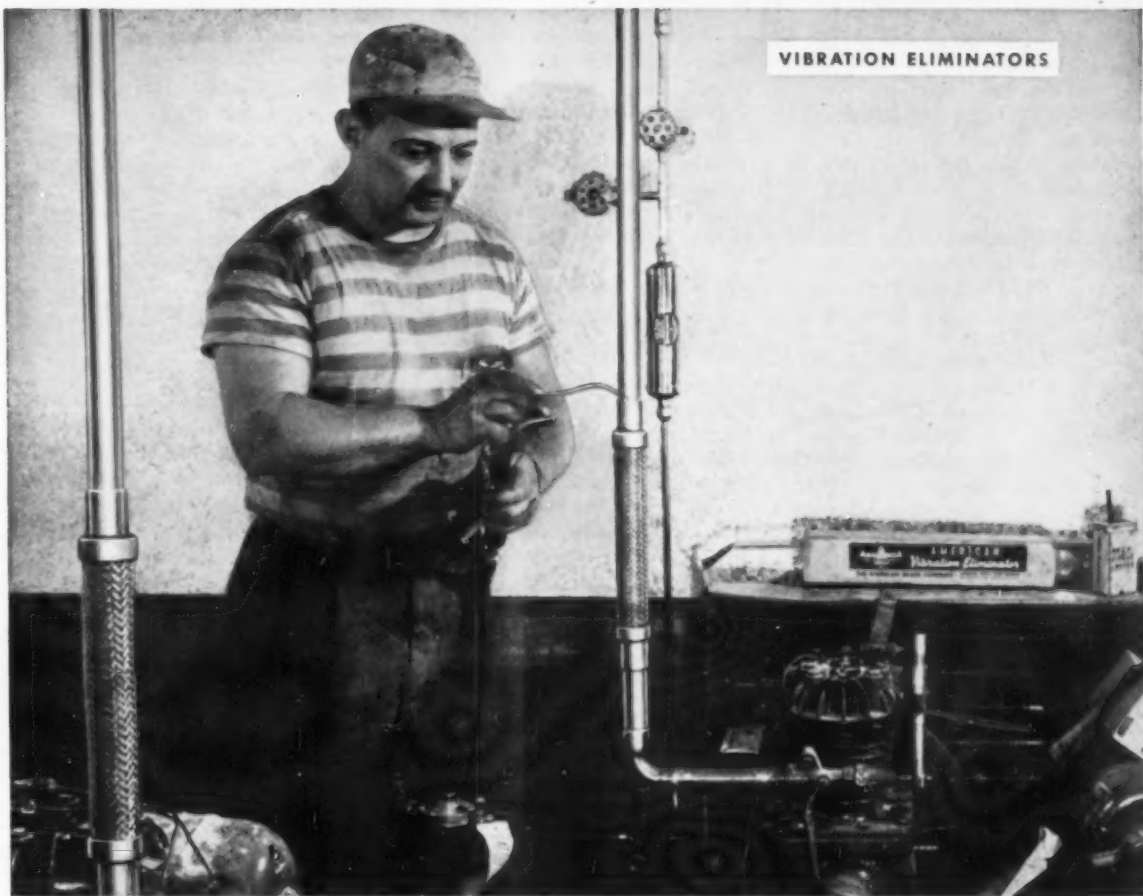
Hassan Brothers, Belleville; Heerema Co., Paterson; Monsen Refrigeration Service, Bloomfield; Orange Refrigeration Service, East Orange; Refrigeration of North Jersey, Inc., Dover; Suburban Refrigeration Co., Inc., Summit; Union Morris Service, Inc., Summit; Engineering and Refrigeration, Inc., Jersey City; King Refrigeration Co., Perth Amboy; Montgomery Engineering Co., Jersey City; and National Appliance Service Co., Union.

Those approved from Montana are: The O. B. Lund Co.; Modern Refrigeration; Pinski Bros.; White Refrigeration Co.; General Refrigeration Co.; Young's Refrigeration; Christensen Plumbing and Heating and Marshall Refrigeration.

Those accepted in the Tampa, Fla. area are: Advance Appliance, Inc.; Durant Bros., Inc.; J. P. Griffin, Inc.; Krauss Air Conditioning of Tampa, Inc.; Southern Equipment Corp. and Tampa Armature Works, Inc.

Accepted from the Kansas City, Mo., area were: Arcticaire; Bill Scurlock Air Conditioning & Heating; Betz Engineering Co.; Turog-Nichols; Air Contractors, Inc.; Ted Weeks Co.; Paris Refrigeration Sales; Temperature Engineering Corp.; DeWilde Refrigeration; Becklein Co.; Woodland Refrigeration & Air Conditioning; Fred King; Air Mart; Air Contractors, Inc. and Harris Bros. Refrigeration Co.

In the far west in Seattle there were 14 new members approved. They are: Electromatic Sales & Service; Modern Refrigeration Co.; Northwest Baker Refrigeration; Seattle Ice Machine Co.; Wilderman Refrigeration Co.; York Corp.; Korthius Refrigeration; Puget Sound Refrigeration; Refrigeration Engineering Co.; Lewis Refrigeration & Supply Co.; Puget Sound Engineering Co.; W.



VIBRATION ELIMINATORS

THREE BROTHERS, Myron, Edmond and Ernest, own and operate AAA Refrigeration Service, Inc., 1804 Nereid Ave., Bronx, N.Y. Above, Ernest connects one of 23 American VE's—ranging in size from  $\frac{3}{4}$ " to  $1\frac{1}{4}$ "—used in refrigeration system for large supermarket.

## "We've used American Vibration Eliminators for 6 years... have never had to replace one"

—says Ernest Steffen, AAA Refrigeration Service, Inc.

"Over the past 6 years we've installed hundreds of American Vibration Eliminators in refrigeration and air-conditioning systems. Not a one has ever given us any trouble," continues Mr. Steffen.

He goes on to say, "We can't afford to let vibration in rigid piping go uncontrolled. Chances are it would mean objectionable noise, cracked piping,

high maintenance costs—and dissatisfied customers.

"That's why we always install an American Vibration Eliminator in the rigid piping above the compressor. These flexible connectors allow for expansion and contraction in rigid lines. They dampen vibration, muffle noise. And they're leakproof... guard refrigerant lines against fatigue-cracking."

Take a tip from AAA Refrigeration. Use quality American vibration eliminators to control vibration in rigid piping. Leading wholesalers stock packaged American VE's to fit standard copper tube sizes. For more information, write for Bulletin VE-310R to: The American Brass Company, American Metal Hose Branch, Waterbury 20, Conn.



American VE's have seamless cores. No laps. No joints... made from phosphor bronze seamless tube.

Circle No. 37 on Reader Service Card  
and AIR CONDITIONING • JANUARY, 1955

for American Vibration Eliminators  
see your

**ANACONDA®**  
DISTRIBUTOR

E. Stone & Co., Inc.; Western Engineers, Inc. and Western Refrigeration Co.

From Houston, Tex., there were 18 accepted. They are: Aircontrol Associates, Inc.; Atlas Air Conditioning Co.; Barber, Inc.; Coastal Equipment Co., Inc.; Gregory-Edwards, Inc.; Natkin & Co.; Smith Engineering Co., Inc.; Straus-Frank Co.; Way Engineering Co.; Wood-Leppard Air Conditioning Co.; Central Plumbing Co., Inc.; Joe E. Johnston Plumbing Co.; Keith Plumbing & Heating Co.; Robischung-Kiesling Contracting Corp.; Swanson Plumbing & Heating Co.; C. Wallace Plumbing Co.; The Warren Co.; and H. F. Watson Co., Inc.

There were 22 accepted from the New York City area. They are: Contractors Air Conditioning Corp.; M. & R., Inc.; Linco Refrigeration; Lane Refrigeration Co., Inc.; The Perfectaire Co.; Rimco Refrigeration Corp.; Arista Air Conditioning Corp.; Five Towns Refrigeration Co., Inc.; AAA Refrigeration Service, Inc.; Coldstream Conditioning Corp.;

Koldaire Refrigeration Co.; Freez-aire Corp.; Consolidated Refrigeration Corp.; H. Klein & Sons; Ditmas Air Conditioning Corp.; Rite-Temp Refrigeration & Air Conditioning Corp.; Circle Conditioning Corp.; Affiliated Air Conditioning Corp.; Eastern Refrigeration; Santoro Bros.; H. E. Frey Co. and Louis Feld Co.

### FTC HEARINGS TO BE RESUMED NEXT MARCH

Federal Trade Commission hearings on unfair trade practices complaints against eight major ice cream companies will start next March and will run for six or eight months, Robert Secrest of the Federal Trade Commission told members of the Refrigeration & Air Conditioning Contractors Association at their recent ninth annual convention in Miami Beach, Fla.

RACCA members also heard Peter T. Schoemann, assistant to president Martin P. Durkin of the United Association, ask for patience and tolerance in the joint

apprenticeship training activities of the union and the contractors' association.

Schoemann and other UA labor representatives who were at the convention joined with contractors who have worked with the union in various joint projects in asserting that many of the problems now confronting contractors can be solved by getting together with the union at the local level.

### KASON NAMES WEST COAST DISTRIBUTOR

Kason Hardware Corp. announces the appointment of Kason Hardware Distributors (California) as its California representatives.

Kason Hardware Distributors (California) with main office and warehouse at 2325 W. Washington Blvd., Los Angeles, under the management of Ben Graber, and its branch office at 2128 San Miguel Dr., Walnut Creek, Calif., under the management of Dick Tobin, will carry a complete stock.

**AIR HANDLING UNITS**  
24 DIFFERENT SIZES FOR  
PIN-POINT SELECTION

FROM 2 TONS  
TO 60 TONS

400 CFM TO  
26,000 CFM  
IN BOTH  
VERTICAL AND  
HORIZONTAL  
CABINETS

### COMPLETE FLEXIBILITY FOR YOU

Choose exactly what you want with Governair Air Handling Units. Secure more closely controlled balance of system load by simple selection of air handling component. 24 complete and individual sizes for greater flexibility.

### OPTIONAL GOVERNNAIR FEATURES:

- Heavy-duty die formed face and by-pass dampers
- Generously sized permanent and replaceable filter sections
- Mixing boxes
- Spray and pan type humidifiers

Manufacturers of Multi-zoned Air Handling Units, Packaged Air Conditioners, Evaporative Condensers, Cooling Towers, Blast Coils, and many others. Write for complete information and specifications.

# GOVERNNAIR

GOVERNNAIR CORPORATION • 513 N. Blackwelder  
Oklahoma City, Okla.

Circle No. 38 on Reader Service Card

JANUARY, 1955 • COMMERCIAL REFRIGERATION



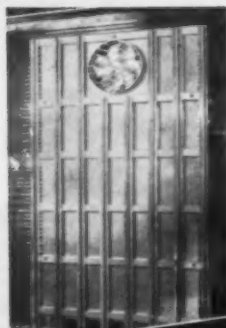
Typical Engine Installation



Lehigh Blower-Evaporator  
For 2-Compressor System



Lehigh Over-Cab Mounting



Typical Plate Blower  
For 2-Compressor System

## ROAD PROVEN

# SYSTEMS and UNITS for REFRIGERATED TRANSPORTATION

## BACKED BY NATION-WIDE INSTALLATION AND SERVICE



### Used As Standard Equipment By America's Leading Fleets, Carriers, Processors, Body Builders

Engineering principle and construction road proven by millions of miles of use. Factory trained, specialized distributors with complete parts stocks assure uninterrupted service everywhere. Factory pre-assembly of components, pre-wiring, and "packaging" of all essentials for mounting in one compact kit speeds installation and reduces costs. Our engineering department is at your service — anywhere! Catalogs gladly mailed.

#### PACKAGED

#### TWO-COMPRESSOR BLOWER-EVAPORATOR SYSTEMS

For intermittent stops or rural delivery. A fully automatic on-the-road and standby combination. Blower-evaporator gives fast pull-down. Package is complete — ready to install.

#### PLATE TYPE SYSTEMS

— for over-the-cab mounting  
or recess in truck body

Used for retail city delivery with frequent stops. The best system for the body builder or service-construction contractor. Packaged complete — ready to install.

#### PACKAGED

#### TWO-COMPRESSOR PLATE-BLOWER SYSTEMS

For on-the-road and standby operation. The right system for continuous city delivery or numerous pick-up and delivery stops. Package includes all operating and mounting components.

#### SINGLE COMPRESSOR SYSTEMS

For on-the-road refrigeration only. Compressor operated by truck engine. Fully automatic controls. Kit contains five major components to be installed by the body builder or user.

★ REMOTE TYPE TRUCK UNITS — 3/4 H.P. thru 3 H.P.



# Lehigh

## BLU-COLD

Lehigh Manufacturing Co.

DIVISION OF LEHIGH FOUNDRIES, INC.

Plant: LANCASTER, PENNA.

Export: 13 E. 40th St., New York

- A complete line of belt-driven units — 1/4 H.P. thru 5 H.P.
- Hermetic Units — 1/2 H.P. thru 1 1/2 H.P.
- Automatic Defrost Units — 3/4 H.P. thru 3 H.P.

Manufacturers of Malleable and Grey Iron Castings, Refrigerating Equipment, Air Valves, Automatic Vending Machines



# KOLD-HOLD®

gives you your choice of

## MORE WAYS TO REFRIGERATE A TRUCK



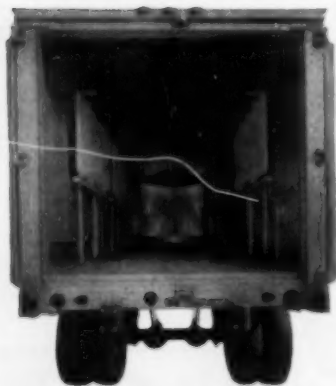
**BEATRICE FOODS COMPANY** uses a Kold-Trux "Mobilmatic" Unit and Hold-Over Plates to keep the temperature of this truck body below freezing. The Kold-Trux Unit is driven through a power take-off from the truck engine.



**UNITED FROZEN FOODS** operates door-to-door delivery trucks that are refrigerated with "Hold-Over" Plates and a mounted compressor. The compressor can be plugged into any standard electric outlet for overnight charging of the plates.



**THIELE SAUSAGE COMPANY** has improved the quality of their delivered meats by refrigerating their trucks with "Hold-Over" Plates. One or two plates in each truck keep it cool throughout an eight hour day.



**DAIRYLAND COOPERATIVE CREAMERY CO.** operates large semi-trailers like this with Kold-Hold "Hold-Over" Plates and make-and-break connections. Plates are charged overnight to keep truck body refrigerated to a predetermined temperature all the next day.

Which do you prefer . . . automatic or semi-automatic truck refrigeration? Kold-Hold can give you many combinations of refrigeration units for both. They will help you select the type of truck refrigeration system most satisfactory for your needs from a variety of highside and lowside units. These include such highsides as the Kold-Trux "Mobilmatic" Unit, a mounted compressor, or make-and-break assemblies, coupled to such lowsides as Kold-Hold "Hold-Over" Plates, Thin Plates, Serpentine Quick-Action Plates or Blowers.

Only Kold-Hold has all these combinations to solve all truck refrigeration problems efficiently and economically. Having more ways to refrigerate a truck, they can find the best way for you.

Send the details of your problems to Kold-Hold today.

**6 WAYS TO REFRIGERATE A TRUCK**  
are described in Bulletin KT-453.  
Send now for your copy.



*Look to Kold-Hold for the latest developments in truck refrigeration*

# KOLD-HOLD division

TRANTRER MANUFACTURING, Inc., 503 E. Hazel St., Lansing 4, Michigan

Circle No. 40 on Reader Service Card

**JANUARY, 1955 • COMMERCIAL REFRIGERATION**



## STEPS TO SURE SALES . . .

*Continued from page 35*

short conversation between prospect and grocer usually is all that is needed to clinch the sale."

There is a secondary advantage to this arrangement, too, Tillman points out. Because at least one example of every type of refrigeration equipment handled by Phoenix Market Equipment already is in use in the Shopping Bag store, Tillman finds he can get by with a minimum inventory of fixtures on his own display floor, thus freeing more of his operating capital for other uses.

Proof of the pudding, it is claimed, is in the eating. And proof of the practicality of Tillman's co-operative arrangement with the supermarket operator lies in the fact that this working agreement not only has made the dealer's selling job a lot easier, but has substantially increased his sales volume as well.

## FLEXIBLE TUBING IN COAST EXPANSION

Flexible Tubing Corp.'s expanded west coast operation is now located at 12230 West Olympic Blvd., Los Angeles. The company's mail office and plant are in Guilford, Conn.

Occupying approximately 4,500 sq.ft. in a one-story building, the expanded operation will permit better service to distributors in the 11 western states. Philip H. Marsh heads the western operation.

## OWENS FORMS OWN FIRM

John J. Owens has announced the formation of the J. J. Owens Agency, as selling agents for manufacturers in the plumbing, heating, industrial and residential air conditioning fields.

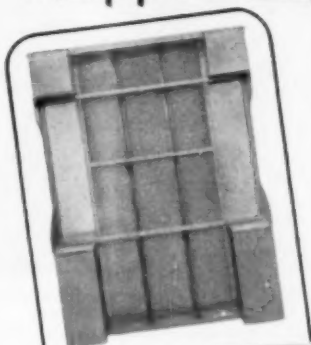
An office will be maintained in Riverton, N. J., which is a suburb of Philadelphia, for the sale of products in the above fields, to Wholesalers.

Owens formerly was associated with Hajoca Corp.

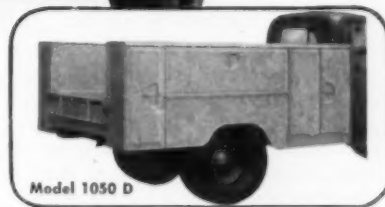
→ A Completely NEW Line of Service Bodies with

# 25 FEATURES

*to help you do every job faster... easier*



Model 900 D  
with upper structure



Model 1050 D

14. Full bolt-action locking bar.
15. Weatherproof compartments . . . lap-seal and gutter drain on all doors.
16. Raised bottoms of all vertical compartments provide extra protection for tools and supplies.
17. Heavy-duty reinforced 16-gage bulkheads.
18. Outside compartment headers 14-gage steel.
19. 4-way, 12-gage, safety tread non-skid floor.
20. From 25 to 35 sq. feet of floor loading area.
21. Through wheel housings for universal dual wheel application.
22. Reinforced tailgate.

23. Extra strength, bridge-type construction with interlocking lateral and longitudinal reinforcements.
24. Side boxes supported by one-piece cross members, reinforced at mounting holes.
25. Beaded fender panels hinged for easy access to wheels and spring shackles.

For Better Service and Greater Utility . . . Specify



# Morrison service bodies

— Write For Complete Details —

Morrison Service Body Div.,  
Morrison Steel Products, Inc.  
688 Amherst Street, Buffalo 7, N. Y.

Send us complete information on the  
NEW Morrison Service Bodies and  
Accessories.

Name..... Title.....  
Firm.....  
Street.....  
City..... Zone..... State.....

• Also manufacturers of MOR-SUN Furnaces and ROLY-DOOR Steel Garage Doors.

Morrison Service Bodies are carried by leading Truck Equipment Distributors in all principal cities

Circle No. 41 on Reader Service Card



**THE PROPER METHODS** of installation of Fiberglas cold storage insulations is discussed by Kenneth Groshon, left, of the McCormick Asbestos Co., Baltimore, and A. W. Cox, right, manager of low temperature insulation sales of Owens-Corning Fiberglas Corp. In the background is a replica of a cold storage room, constructed to illustrate approved methods of installation. Right, Asphalt-Enclosed Board is applied with cold mastic and to the left, Preformed Insulation is installed by the Dry Wall Method developed by Owens-Corning. The meeting, sponsored by Owens-Corning for its eastern cold storage independent contractors and held in the Sheraton-Belvedere Hotel in Baltimore, was so successful the company is contemplating conducting similar regional meetings throughout the country.

## G-E OUTLETS LEARN 1955 COOLING SALES PLANS

General Electric's 1955 sales plans for packaged air conditioners were presented to the field recently as a flying management team met with G.E. distributors in six cities around the country.

Led by F. J. Van Poppelen, general sales manager of the Air Conditioning Div., and G. K. Iwashita, general manager of G-E's Commercial and Industrial Air Conditioning Dept., the management team held meetings in New York City, Cleveland, Chicago, Atlanta, New Orleans, and Los Angeles to present the company's "dealer profit plan" to distributors.

One of the key points of the "dealer profit plan" allows an end-user to purchase cooling equipment during the fall and winter with only 10% down, deferring other payments until the next year's cooling season begins.

Dealer inventory financing, dealer warehousing plan, and work-in-process financing, enable dealers to carry adequate stock and make quick installation without tying up working capital. The new inventory control program ties a distributor's movement of merchandise to his yearly sales goal and gives him a

constant check on the progress made by his organization.

**BUY FROM YOUR  
REFRIGERATION WHOLESALER**



**A PISTOL PACKING MAMA** is pulling together a few of the ads and mailing pieces that A-P Controls is using this fall in its sales drive through refrigeration parts wholesalers. Cactus Pete (if you haven't already read about him) will be helping jobbers string-up a set of display posters that are "as bright as a desert sunset." Of course, A-P publicity releases say, this stuff is only for refrigeration and air conditioning critters who are interested in making sales, but aren't "gun shy." A-P October trade press ads were also built around the "Cactus Pete" theme.

## TEST EQUIPMENT MAKERS GIVE "APPROVAL" SEAL

The Environmental Equipment Institute has awarded its seal of approval to seven member companies — those determined as having engineering staffs adequate to design and manufacture this type of equipment and having a record reflecting high standards of business ethics. Members of the Institute manufacture equipment for producing high and low temperatures, low pressure, humidity, salt spray and other conditions found in various environments on the earth.

Companies awarded the Institute's seal of approval include: Alpha Electric Refrigeration Co., Detroit; Bemco, Inc., North Hollywood, Calif.; Cincinnati Sub-Zero Products Co., Cincinnati; Harris Refrigeration Co., Cambridge, Mass.; Standard Cabinet Co., Carlstadt, N. J.; Tenney Engineering, Inc., Union, N. J.; Webber Mfg. Co., Inc., Indianapolis.

The program provides for the giving of a registration certificate to purchasers of environmental test equipment from any of the various manufacturers, and the provision that any complaints of faulty performance can be referred to the Institute for investigation.



**REVERE**

**DRYSEAL**

## COPPER REFRIGERATION TUBE

Not one but two crimps are made in each end of DRYSEAL. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube.

The seal is made in such a way that the diameter of the tube does not change, which permits DRYSEAL to be passed through any opening large enough for the tube itself.

As for bendability—the soft temper of the copper used in DRYSEAL allows you to make the most intricate bends by hand. And its ductility and soft temper make it extremely easy to flare for compression fittings without danger of splitting. Economical tube sizes range from  $\frac{1}{8}$ " to  $\frac{3}{8}$ " O.D.

In addition, the DRYSEAL carton has been attractively designed for easy identification in stock. It contains one 50-foot coil of DRYSEAL . . . is easier to handle, light weight, economical.

Puts the Double  
Crimp on Dirt  
and Moisture



**REVERE**

**COPPER AND BRASS INCORPORATED**

Founded by Paul Revere in 1801  
230 Park Avenue, New York 17, N. Y.

Mills; Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y. Sales Offices in Principal Cities, Distributors Everywhere.

Circle No. 42 on Reader Service Card

**SPECIFY**

**PROSTACO**

**WHEN YOU NEED  
PARTS FOR**

**COLDSPOT**

Save time. Save money.  
Order all parts for Cold-  
spot Compressors from  
PROSTACO.

**WRITE FOR  
CATALOG 50B**

« PROSTACO »

**PRODUCTION**  
**STAMPING**  
**COMPANY**

2316 SOUTH 24th ST.  
OMAHA 9, NEBRASKA

**Buy Peerless**  
**FOR PERFORMANCE**



**Flash Coolers  
Fin Coils  
Flash Pans**

The Peerless Line of quality products is designed and constructed to meet every demand of modern commercial refrigeration. Our Flash Coolers, Fin Coils and Flash Cooler Pans have proved their superiority in performance under widely varying operating conditions. They are built with an eye to appearance, economy of space, and the utmost convenience in installation and servicing. Louvers fabricated from polished aluminum. Made in a wide variety of standardized sizes and styles—all of unchallenged Peerless quality. Write for Bulletin 49G today.

**Peerless of America, Inc.**

5830 No. Pulaski Road  
Chicago 30, Illinois, U.S.A.

Circle No. 85 on Reader Service Card

**SPORLAN, FRIEDRICH PLAN '55 SALES DRIVES**



**BETTER SERVICE** through improved techniques keynoted the recent five-day sales meeting and conference of Sporlan Valve Co. Field and factory personnel shown here include: (front row) C. C. Grote, W. L. Canfield, H. T. Lange, H. F. Spoehrer, W. T. Carmody, W. F. Wischmeyer, H. F. Shield, W. H. Krack; (second row) J. T. Barry, D. M. Lawson, P. J. McCarty, T. H. Silary, J. E. Dannels, F. A. M. Dawson, W. P. Schober, F. C. Hawco, J. J. Mays, W. A. Reichenbach; (third row) D. B. Rentschler, R. E. Niedermeier, J. A. Hogan, R. L. Vandiver, F. G. Jaeger, E. C. Fockler, A. L. Javes, M. D. McAnany, R. H. Parlin.



**PLEASED ABOUT PROSPECTS** for 1955 are these regional managers and factory officials of Friedrich Refrigerators Inc., photographed at the recent annual meeting which celebrated the greatest sales year in the history of the 71-years-old refrigeration and air conditioning manufacturer. Here (seated) are: Myrle Gunter, southeastern regional manager; Jack Gore, midwestern regional manager; Bill Briner, southwestern regional manager; R. H. Friedrich, board chairman; Reese L. Harrison, president; Joe Rubenson, gulf coast regional manager; Milo Crymble, New England regional manager; Al Barry, great lakes states manager. Standing: Jimmy Neace, south central states manager; Arthur Kinley, sales personnel manager; Carl Stevens, sales promotion manager; Jack Pritchett, national sales manager; Julius Brinkoeter, vice president in charge of sales; Charles Rion, eastern seaboard regional manager; Tom McKelvy, west coast regional manager.

**GLASS FIBERS CORP.  
TO UNITE 5 PLANTS**

A plan for uniting the Fiber Glass and Corrugated Divisions of Libbey-Owens-Ford Glass Co. and the business and assets of Glass Fibers, Inc., into a new organization to be known as Glass Fibers Corp. was announced recently by John D. Biggers, chairman of Lib-

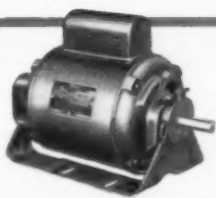
bey-Owens-Ford, and Randolph H. Barnard, president of Glass Fibers. The plan will be submitted to the shareholders of Glass Fibers, Inc. for approval at an early date.

The new company will have five manufacturing plants in four states with more than 1500 employees and a potential production capacity of \$25,000,000 annually.



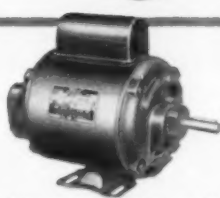


Here's why the  
Wagner Type **RK**  
Capacitor-Start Motor  
is the  
**R**ight **K**ind  
of motor  
for your  
singlephase  
applications



**NEW 56 FRAME RESILIENT MOUNTING**—This Wagner Type RK is shown in the new 56 frame that is used for 1/2, 3/4 and 1 hp ratings. The resilient mounting offers unusual freedom from vibration and noise.

Smaller fractional ratings, and integral sizes from 1 through 5 hp, are also available.



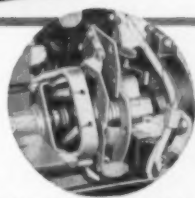
**NEW 56 FRAME WITH WELDED RIGID BASE**—Wagner rigid base Type RK motor, in the new 56 frame size. The formed steel base is securely welded to the rolled steel frame to produce a strong, rigid assembly that will not get out of alignment.

Type RK is also available with machined end plates for flange mounting.



**THICK ROLLED STEEL FRAMES**

—Frames for these motors are made of thick rolled steel, with machined beads on each end which accurately position the end plates. The frames have no openings, and are treated inside and out to prevent rusting.



**LONG-LIFE CENTRIFUGAL SWITCH**

—These motors are equipped with the Wagner-made quick break switch that disconnects the starting winding and capacitor from the line when the motor approaches operating speed. It will make over a million starts and stops without trouble—your assurance of years and years of unflinching performance.

A lot depends on the motor you specify to power your product. The selection of a Wagner Motor will assure:

**Customer Acceptance** that results from the recognition of a motor built by a manufacturer with a *proven* reputation for quality motors...

**Customer Satisfaction** that results from uniform trouble-free performance and long-life operation...

**Customer Service** possible only when the motor manu-

facturer has the ability and the organization to provide immediate repair parts and service, *when* and *where* they're needed.

The Wagner Type RK Capacitor-start induction motor meets these requirements and offers the additional advantages shown above. That's why the RK is first choice of many leading manufacturers of machines and equipment that require singlephase motors in fractional or integral ratings up through 5 hp.

Your nearby Wagner engineer can help you select the *right* motor for your application. Call the nearest of our 32 branch offices, or write us.



WAGNER ELECTRIC CORPORATION  
6442 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

ELECTRIC MOTORS  
TRANSFORMERS  
INDUSTRIAL BRAKES  
AUTOMOTIVE  
BRAKE SYSTEMS—  
AIR AND HYDRAULIC

M55 4

Circle No. 43 on Reader Service Card  
and AIR CONDITIONING • JANUARY, 1955



# Now you can save 25%—32% on air conditioning installations with *Thermafex*:<sup>®</sup> DUCT



## Here's why Thermafex is better:

Thermafex has been designed exclusively for use as a cost-saving connector from either vertical or horizontal main line ducts to diffusers, sound boxes, and/or other types of distributors in both high- and low-pressure air conditioning systems.

1. **Light in Weight**—Thermafex is exceptionally light in weight . . . easy to handle.

2. **Maximum Flexibility**—Thermafex snakes around obstructions . . . takes close bends with a radius equal to half its own diameter. Eliminates misalignment problems between main line and sound box or diffuser.

3. **Easy to Install**—No special skill or training needed for the installation of Thermafex. Lengths can be easily carried up ladders and cut to size using only a pocketknife and diagonal side cutters. No special fittings required . . . slips easily in place for airtight service.

4. **Flameproof — Waterproof**—Due to the unique construction of Thermafex, it is highly flame resistant, will not support combustion, and is completely impervious to the effects of moisture, rust, rot, fungus and mildew.

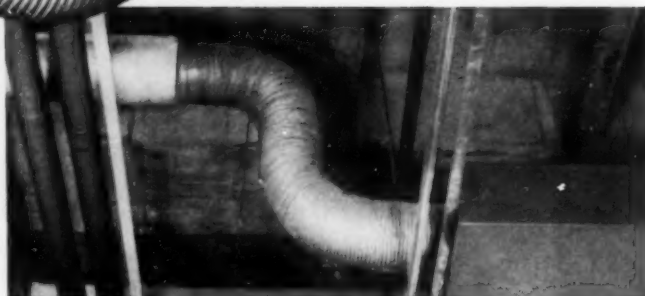
5. **Reduces Vibration — Deadens Noise**—Thermafex reduces mechanical noises in the line due to vibration. Its unique acoustical features also dampen air-stream noises. This is particularly important for low-pressure systems where connections are made directly from main line to diffuser.

6. **Excellent Air Flow Characteristics**—Thermafex has excellent air flow characteristics with minimum friction loss in bends.

7. **Adaptability**—Thermafex is available in a wide variety of diameters, 3" to 12", in standard 12 foot lengths.

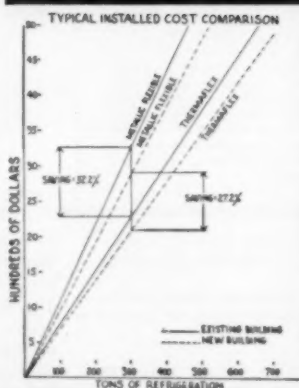
## SEE THERMAFLEX ON DISPLAY

Visit our booth #C-156 at the International Heating & Ventilating Exposition, Commercial Museum & Convention Hall Philadelphia, Pa.  
January 24 to 28, 1955



Thermafex bends easily to fit any installation

## HERE'S PROOF



## TYPICAL INSTALLED COST COMPARISON

1000 TONS NEW BLDG.	TYPICAL INSTALLED COST COMPARISON	
	COST	SAVINGS
RIGID METAL	8,960.00	} 30%
METALLIC FLEXIBLE	8,300.00	
THERMAFLEX	6,225.00	

THERE'S AN AGENT NEAR YOU

Write for fully illustrated  
brochure describing  
Thermafex.  
Address Department CRAC

*Flexible  
Tubing*  
CORPORATION

Guilford, Connecticut

Pasadena 1, California

Circle No. 44 on Reader Service Card

JANUARY, 1955 • COMMERCIAL REFRIGERATION

**YOUR**  
*Thermaflex*  
**AGENT**  
**IS LISTED HERE**

Arkansas, Little Rock  
J. C. Lewis Company  
209-211 East Markham Street

California, San Francisco 10  
Norman S. Wright & Company  
2779 Folsom Street

Colorado, Denver  
The McCombs Supply Company  
1524 15th Street

Connecticut, Ridgefield  
Mr. Joseph G. Stalib  
P. O. Box 51

Georgia, Atlanta 5  
Graves Refrigeration, Inc.  
254 Boulevard, N. E.

Illinois, Chicago 11  
George V. Zintel Company  
840 North Michigan Avenue

Indiana, Indianapolis 4  
Hyland Engineering Sales  
623 Architects & Builders Building

Kentucky, St. Matthews  
Ogle Engineering Sales  
P. O. Box 74

Massachusetts, Brookline  
The Leonhardt Company  
89 Pond Avenue

Michigan, Detroit  
F. B. Wright Company  
1565 Oakman Boulevard

Minnesota, St. Paul 4  
Hensen & Stafford  
1961 St. Anthony Avenue

Missouri, Kansas City 8  
Heaven Engineering Company  
1529 Wyandotte

New Mexico, Albuquerque  
McCombs Supply Company  
322 First Street N. W.

New York, Buffalo 2  
V. N. Harwood Company  
250 Delaware Avenue

New York, New York 16  
The Robert B. Darling Company  
207 East 37th Street

New York, Syracuse 2  
Syracuse General Sales Company  
205 Townsend Street

North Carolina, Charlotte  
Howard V. Caton Company  
Post Office Box 4126  
(1425 Elizabeth Avenue)

Ohio, Cincinnati 38  
G. V. Sutfin Company  
P. O. Box 43  
Western Hills Station

Ohio, Cleveland  
Avery Products Company  
1908 Euclid Avenue

Oklahoma, Oklahoma City  
Gus W. Otter Sales, Inc.  
665 First National Bank &  
Trust Building

Pennsylvania, Philadelphia 4  
George F. Bertrand Company  
101 North 33 Street

Pennsylvania, Pittsburgh 33  
Ward & Black Engineering Sales  
822 Chapel Way

Texas, Dallas  
W. E. Lewis & Company  
2213 Butler

Texas, Houston 6  
Jack Thomas Davis  
Room 211, 3303 Montrose Boulevard

Texas, San Antonio  
L. S. Pawkett & Company  
616 Insurance Building

## U. S. AIR CO. CLEARED OF PATENT CHARGES

A decision in favor of United States Air Conditioning Corp. has been handed down by the United States Court of Appeals for the Tenth Circuit in a patent infringement and unfair competition suit brought against United States Air Conditioning Corp. by Governair Corp.

The decision exonerates United States Air Conditioning Corp.'s central station "packaged" air conditioning units of the RK and DRK type, containing evaporative condensers, of all charges of infringement of Wilson patent No. 2, 297, 928, dated Oct. 6, 1942 and of all charges of unfair competition.



## ARI MEETING DATES SET FOR NEXT FOUR YEARS

Dates for annual meetings of the Air-Conditioning & Refrigeration Institute have been established for the next several years, according to George S. Jones, executive director. All of the meetings will be held at the Homestead, Hot Springs, Va. The 1955 meeting will be held June 5 to 8. In 1956, the meeting will be held the first week in May; the 1957 and 1958 meetings will be during the second week in May.

## PRITCHARD CO. MOVES

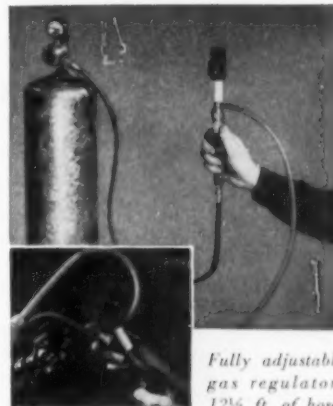
J. F. Pritchard & Co. of California has announced the removal of its offices to its new building at 4625 Roanoke Parkway, Kansas City, Mo. The company manufactures water cooling towers.

**FAST  
DEPENDABLE  
ECONOMICAL**

**PREST-O-LITE**

Trade-Mark

**Leak Detector Outfit**



Fully adjustable  
gas regulator,  
12½ ft. of hose,  
precision handle, leak detecting stem, and  
suction hose complete this valuable kit.

You can quickly locate the most minute leaks of halide refrigerant gases with this handy, air-acetylene, leak detecting outfit. An extra-long hose lets you work unhampered in those hard-to-get-at places. And a shutoff valve and built-in pilot flame control in the handle give you real convenience and economy. Ask your LINDE jobber for a demonstration. Or write LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y. In Canada: Dominion Oxygen Company, Toronto.

**GET IT FROM YOUR  
LINDE JOBBER**

The terms "Prest-O-Lite" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

Circle No. 45 on Reader Service Card

## LETTERS

### Cooling Tower Problems

EDITOR:

I read each issue of COMMERCIAL REFRIGERATION & AIR CONDITIONING magazine and enjoy your articles very much.

I have a question which I would like very much to have a detailed answer on, please.

First, for your information and justification for this request, I am Foreman of the Air Conditioning and Refrigeration shop of the large Air Base located here. Our crew is responsible for the maintenance and operation of close to 300 units of equipment.

We have air conditioners on both natural and forced air cooling towers. In the spring, when the heat load is light and the water cold, the head pressure drops, doing away with the pressure differential across the expansion valve, lowering the coil. Our pumps are all centrifugal of a low pressure type with no water regulating valves on the units. On one building we have a 20, 5, and 3-ton unit, all on one 30-ton tower, with an individual pump sized for each unit, and (as mentioned above) no water regulating valves. In this particular instance, should the 3-ton unit be on alone in cool weather, the 30-ton tower would have full air volume with only a small circulation of water, which, of course, will do away with satisfactory head pressure.

A contract is already let to relocate five 5-ton Chrysler Airtemp units to be connected to a new 25-ton forced air cooling tower. Again as above mentioned, when only one or two units are on the water will be too cool and the head pressure way down.

My recommendation was to install a water valve on each unit to maintain a constant head. The above mentioned tower will be equipped with a low pressure centrifugal pump and, as you know, when the flow on a rotary pump is checked or retarded, the pump will reach its maximum pressure and the amperage will drop off and the motor idle along.

If necessary, a pressure-operated bypass could be installed to circulate part of the flow to the tower until all units were on. One person said to put water valves on a unit on a tower would ruin the water valves and condensers and recommended an aquastat to cut the fan off when the water was cold. On a system of this size, however, one unit would not warm the

water up fast enough to prevent the coil icing up.

In the last few days a new 10-ton Carrier Weathermaker unit (not yet turned over by the installation contractors) using a forced draft cooling tower, had the evaporator coil completely ice up. Again, as stated before, there was a light load and cold condenser water, and no water regulating valve to hold a constant head pressure.

In your opinion, should water regulating valves always be installed to control the head pressure and assure proper feeding of the expansion valve? If your answer is no, why and what damage might be done, and what is your recommendation to correct the conditions mentioned?

HAROLD STITES  
Enid, Okla.

*Your problem on controlling head pressures during light loading periods for cooling tower operation is a universal problem, with no simple answer. Actually, there is no set procedure for controlling head pressures that can be recommended for all cases.*

*In extreme cases where multiple units are connected to one tower, the only solution is to use automatic water regulating valves at each unit. This is a fairly common practice, particularly on commercial refrigeration applications.*

*If the valves are sized properly, there is no reason to expect any damage or undue wear to the valves or the condensers. In sizing the water valves it must be remembered that your water quantities will be from 3 to 4 gallons per minute per ton. Therefore, the valve sizes will be quite large. In spite of this larger size, the pressure drop across the valves must be carefully checked because it will directly affect the horsepower requirements of the circulating pumps.*

*The simplest and most common method of controlling cooling tower capacity is to cycle the tower fan from leaving water temperature, or to automatically by-pass the tower with a solenoid valve and thermostat in the cost of gravity towers. Roughly, this method should be satisfactory if the minimum equipment capacity does not fall below 40% of the tower capacity.*

BUY FROM YOUR  
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### Deplores Lack of Parts for Air Conditioner Service

EDITOR:

Have just finished reading your article, "Automotive Air Conditioning Design" in the May, 1954 issue of your fine magazine. I took special note of the last paragraph, "Service is Key Factor". How true! I feel I should mention, however, the fact that field service is at this time far from satisfactory because of the fact that replacement parts and service manuals are not readily available to independent service organizations.

At present, I am doing both warranty and out of warranty service on Cadillac, Pontiac, Olds, and Dodge air conditioning systems in this area and have found it extremely difficult to obtain parts, as they are not available to us through our refrigeration parts wholesalers. I have a Dodge (Chrysler Airtemp system with a Tecumseh compressor) with a bad seal which has been in the shop for a week already and we have not located a replacement seal as yet. We first tried all of the parts houses and then wired the Tecumseh factory who in turn referred us to Chrysler Mo-Par in Detroit.

We think it is time the automotive industry realizes the fact that for the the most part, automotive air conditioning units are going to be serviced by established service organizations and not by automobile mechanics who have been sent to two-day schools for this purpose. They should realize that we need the parts (at reasonable prices) to do the job.

CLYDE G. PETERSON  
Patterson, La.

### Reader Seeks Answers On Solenoid Operation

EDITOR:

I have been doing service work on commercial and domestic jobs for close onto eight years. One phase of the work, the solenoid, is rather difficult for me to understand.

The commercial jobs that I cover are walk-in coolers for meat or beer, reach-in, display, etc. As the solenoid is most frequently found on the walk-in boxes, I shall center my question on that.

There are two typical walk-in units around the city:

1. Walk-in cooler 12 x 12 x 8 feet high, cooled by a 1-hp compressor and a blower. Compressor controlled by a low pressure control. No temperature control used at all.

Proper adjustment on the low pressure control gives satisfactory box temperature.

2. Same cooler, compressor, low pressure control, blower but in addition a temperature control mounted on the outside of chest with thermal bulb inside, the temperature control wired to a solenoid so that when the temperature of box reaches a set high the contacts close and open the solenoid valve which in turn feeds refrigerants to the expansion valve and back to the low pressure control finally starting the unit.

What I do not understand is why do you find cooler No. 1 running just as good as cooler No. 2? Is the added solenoid and thermostatic control actually unnecessary to run a unit which is already set up with a low pressure control? Approximately how soon after a temperature control closes and energizes the solenoid should the compressor start to run?

I have heard a solenoid sing for over five minutes before the pump started to run. Is this a sign of trouble or might it be an indication that there is a wide difference between the setting of the temperature control and the low pressure control? Is there such a thing as a set rule

for adjusting a temperature and low pressure control when they are on the same unit?

Let us say the temperature control is set to open the solenoid when the box goes up to 45 degrees. Should the low pressure control be adjusted to cut in at a pressure equal to this temperature or at a higher one? Briefly, isn't it possible for such a unit to be thrown off the line by the owner going down and setting the temperature control higher or lower and making no change on the low pressure control?

*We have checked this problem with one of the editors of our Applications Manual, and he advises as follows:*

*The low pressure control is actually a closer temperature control for a single compressor and coil on a walk-in box than a thermostat and solenoid valve. The only time a thermostat and solenoid valve need be applied is in cases where more than one walk-in box is operating on the same compressor, and then it is required only when the two or more boxes are to be held at different temperatures.*

*The time delay after the solenoid valve is energized until the compressor operates depends on the cut-in setting of the pressure switch. This setting should be slightly over 30 pounds on Freon-12 to assure that all frost is off the coils. On this basis, if the coil is defrosted the delay time should be about 15-60 seconds. If the coil is not completely defrosted this time delay could be very long.*

*The pressure control should be set to cut out near the balance point or zero pounds pressure and, as described above, the cut-in should be set just above the frost point or about 31 pounds. Changing the temperature setting of the thermostat should not bother the compressor operation.*

## 2 NAMED TO BOARD

J.W. McDougal, president of Bonney Forge & Tool Works, has announced that Spencer H. Mieras and Kenneth W. Foust have been elected to fill two vacancies on the board of directors. Mieras also was elected executive vice president.

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## HERE'S HOW!

### Keep Charging Hoses And Manifolds Sealed

It's surprising how sloppy some servicemen (even some of the more experienced ones) can become in their operating practices.

It's not uncommon, for instance, to see charging hoses so wet that water can be shaken out of them. Normally, any water in the hose will be flushed into the machine when the charge is applied, and if the charge is small (a few pounds) sufficient water can be present immediately from this source alone to cause corrosion and freeze-ups.

To prevent such trouble-making carelessness, always be sure to see to it that charging hoses and manifolds are kept plugged or capped at all times when not in use.

I DO IT

THIS WAY

**T**O drill through the side of a refrigerator case or cabinet without chipping or cracking the porcelain, I use a grinding wheel or stone in my small electric hand drill. With this tool I buff off the finish in the exact spot where I wish to drill. In using this technique it is important, of course, to buff off a spot just large enough to accommodate the size bolt or screw you wish to insert.

**H. A. Marberry**  
Bradford, Mass.

### FOUNTAIN FREEZER SERVICE Mix

Customer dissatisfaction can often be traced to the quality of the mix furnished to them by the dairies, and yet might appear that the refrigeration system of the machine is not functioning cor-



### WANT TO EARN \$5?

Then dream up some good idea for saving yourself time, money, or aggravation on a service call, and tell us all about it. Just jot it down on the nearest scratch pad, together with a sketch if you think that would help, and send it to Here's How Editor, Commercial Refrigeration and Air Conditioning. If the Editor agrees that your idea is worthwhile, he'll make your dream come true by publishing it in the magazine and promptly sending you a check for \$5. Why not start reaching for that pencil right now?

rectly. The customer might complain that one day a machine was functioning perfectly and yet the following day, with exactly the same setting, it takes much longer to freeze or the product does not hold the same consistency.

It should be known that mix made with various sweeteners — honey instead of sugar, and even different types of sugars — will produce a product of different consistency at different temperatures.

In other words, if the machine is set to give a product of satisfactory consistency at 21 F with one type of mix, and the dairy uses a different type of sweetener the next day so that the mix may have to be frozen down to 19 F in

order to obtain the same consistency, it is easily seen that this will cause dissatisfaction, as controls will have to be reset for the new temperature setting required, and it will take longer to freeze to that lower temperature.

No amount of checking of the refrigeration system or readjustment of expansion valves will correct this condition.

Another example is that a complaint will be heard that the con-

I DO IT

THIS WAY

**O**N air-cooled units which have a double-shafted motor to drive both the condenser and evaporator blowers and slinger wheel, I drill a hole in the base of the unit to prevent the slinger from freezing to the base in winter when the fan alone is being used for ventilation. This condition most frequently occurs when driving snow or rain is allowed to accumulate. During the cooling season I simply plug up this hole with a sheet metal screw or with putty.

**John Debrowal**  
New Hyde Park, L.I., N.Y.

sistency of the product will not remain uniform, or that butterfat will churn out of the mix.

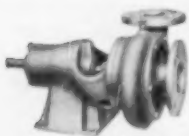
There again, no amount of refrigeration service will help. The working of the product in the cylinder before it is drawn demands that the mix be properly homogenized at the dairy and that its ingredients assure a uniform frozen product when held in the machine for long periods of time. This requirement is not usually necessary when the mix is used for making hard ice cream at the dairy, since it

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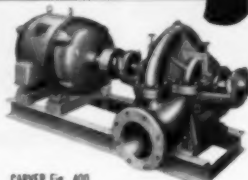
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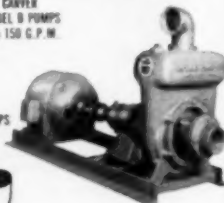
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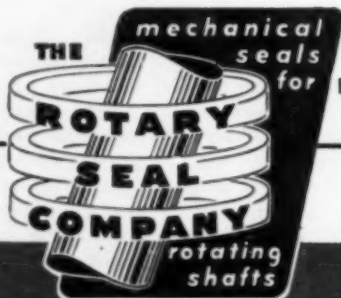
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is completely drawn out of the machine immediately upon freezing.

Nevertheless, servicemen should be aware that any condition which causes a reduction in machine efficiency and results in a longer than normal freezing time, and consequently longer operation of the dasher mechanism, will tend to make this condition worse.

## I DO IT THIS WAY

WHEN adjustments to pressure control settings have to be made and the coils are frosted, you don't have the necessary high pressure for adjusting cut-in setting. You must wait for the coils to defrost. This means either a return trip when the unit is shut down, or melting the ice from the coils with the heat of your torch.

Instead, I do it this way. With the machine off, I take a pressure reading and find it is much too low for checking cut-in setting, so I install a low side gauge and find 24 lbs pressure. I want to check and adjust cut-in point, front seat or throttle suction service valve, or pump down all refrigerant into receiver until control stops the unit. Note cut-out pressure at this point. Control cut-in manually.

Let's say cut-out setting is 12 lbs. Now we know the cut-out setting, but don't have the cut-in setting. Next, find the differential by letting gas come into the compressor. When pressure rises to 24 lbs, turn range setting screw or knob until machine starts. Pump down or throttle service valve for new cut-out.

Let's say the new cut-out is 6 lbs gage pressure, so we now have a setting of 24 lbs cut-in and 6 lbs cut-out. Differential then is 18 lbs. One can easily see that the original setting was 12 lbs cut-out and 30 lbs cut-in.

To raise cut-in setting 4 lbs so we can have a cut-in setting of 34 lbs gage, you adjust control 1 to 2 lbs cut-out. Now we have a differential of 22 lbs. Next, adjust control for new setting by raising range to original cut-out setting of 12 lbs. The control should now be set for 34 lbs cut-in and 12 lbs cut-out.

This sounds like it would take a long time to do, but in actual practice it really doesn't.

Michael Shola  
Bridgeport, Conn.

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## "Freon" Expert Traces Cause of Scattered Motor Failures on F-22 Hermetics

Scattered cases of motor failures in integral horsepower hermetic units charged with "Freon-22" may be due to inadequate insulation coupled with flexing action of motor winding wire and end coils under heavy starting loads.

That opinion was expressed to the American Society of Refrigeration Engineers at their recent annual meeting by Dr. B. J. Eiseman, Jr., of the Du Pont Co.'s "Kinetic" Chemicals Div.

Reporting on extensive research into causes of motor failure, Dr. Eiseman said laboratory tests indicated the refrigerant itself showed no significant difference in dielectric strength or resistivity over "Freon-12" which had been used in nearly all hermetic units prior to the introduction of "Freon-22". The Du Pont research studies were begun after manufacturers reported some motor failures after switching to "Freon-22", which offers 50-60% more cooling capacity per unit of compressor displacement than "Freon-12".

Resistivity and dielectric strength of both "Freon-12" and "Freon-22" are so high, Dr. Eiseman pointed out, that neither would permit passage of enough current, either in their liquid or gaseous state, to cause electrical failure. The motor which drives the compressor in sealed hermetic units is surrounded by vapors of "Freon", which help carry off any heat generated by the motor.

While laboratory tests proved all of the "Freon" refrigerants are excellent insulators in themselves, the research indicated that some softening of commonly-used wire insulations by the different types of "Freon" might be the determining factor in motor failures. While none of the insulations tested was affected by "Freon-12" the tests showed some softening, particularly of "Formvar" resin coating which is widely used in hermetic units, by "Freon-22".

The effect of "Freon-22" on "Formvar", however, is a physical one only and not a chemical change, Dr. Eiseman said. Tests

showed that insulations which softened while immersed in sealed glass tubes of "Freon-22" hardened and returned to their original condition within a few minutes after removal from the refrigerant. Prolonged baking, or curing, of the "Formvar" insulation increased its resistance to softening in the presence of "Freon-22".

Nylon insulation, it was found, was unaffected by "Freon-22".

Motor failures have occurred primarily in integral horsepower units rather than in fractional horsepower units of the type used in most home refrigerators and in many freezers and air-conditioning units, it was pointed out. This may be due in part to the fact that the start-up load on larger units is much higher than in the case of fractional units, Dr. Eiseman said. Start-up loads in integral units may be 2½ times or more the operating load, while in fractional horsepower units start-up load may be only 125% of the operating load.

Failure rate in all cases has been very small, Dr. Eiseman emphasized.

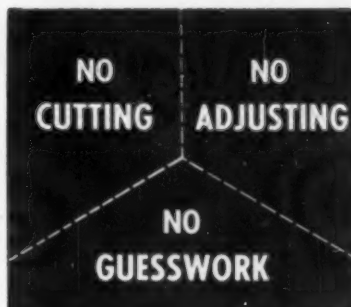
### "FREON-22" AVAILABLE AT 29 REGIONAL WAREHOUSES

Increased production has permitted restocking of small cylinder quantities of "Freon-22" in 29 regional warehouses throughout the country, the Du Pont Co. announces.

"Freon-22" had, since early this year, been available only from the company's Carney's Point, N. J., plant. Now, the material can be obtained in 9-, 22-, and 125-lb. cylinders at any of the company's "Kinetic" Div. warehouses.

### HEADS LITHIUM SALES

William F. O'Brien, eastern states sales representative for American Potash & Chemical Corp., has been appointed manager of lithium sales for the company. He will headquarter at the company's New York sales office.



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**MUCH THAT WAS NEW** in the way of service equipment was demonstrated at the ARI-RSES Minneapolis educational conference. Left: Bob Hintze and Stan Willis, Kerotest Mfg. Co., and Bill Hol-



lenbeck and R. V. Huffman, Cape Girardeau, Mo. Center: Henry Schmauss, Lake City, Minn.; R. G. Dunham Jr. and Bob Barnett, Jas. P. Marsh Co.; Stanley Wold, Lake City, Minn. Right: J. C.



Titus, Bolivar, Mo.; Ned Marshall, Henry Valve Co.; George Wilson, Chicago manufacturers agent; George Schrier, Eston Chemicals, and R. L. Bonham, Iola, Kansas. (Photos by Irving Alter.)



**EDUCATIONAL EXHIBITS** at the Minneapolis ARI-RSES conference received much attention from refrigeration and air conditioning men who attended. Here are typical scenes. Left: Gordon Lynch, Loudon Mfg. Co., Minneapolis;

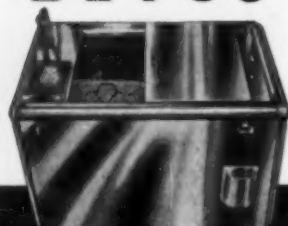


Rudy Berg, Copeland; and Frank Pond, Refrigeration & Industrial Supply Co., refrigeration parts wholesaler. Center: M. J. Schinke, Admiral Corp.; Earl Leaman Jr., James Refrigeration Co., Mason City, Iowa; J. McFarland and C. E. Meginnis,



Davison Chemical Co. Right: George Geldert, Minneapolis; Willis Stafford, Bud McKee and Harris Paxton, of Detroit Controls, and Irving Victor, Victor Cleaning Machinery Co., Minneapolis. (Photos by Irving Alter, The Harry Alter Co.)

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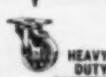
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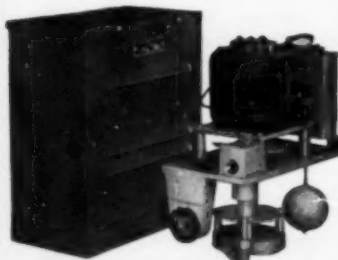
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COMMERCIAL REFRIGERATION



## CARRIER-BRYANT MERGER UP TO STOCKHOLDERS

The program for merging Carrier Corp. and Affiliated Gas Equipment, Inc., has been approved by the boards of directors of the two companies, subject to legal requirements including ratification by stockholders, it was announced by Cloud Wampler, president and chairman of Carrier, and Lyle C. Harvey, president and general manager of Affiliated.

Wampler said present plans are that the two major operating divisions of Affiliated Gas Equipment, Bryant and West Coast, will become operating divisions of Carrier. Harvey, head of Affiliated, will become senior vice president and a director of Carrier upon completion of the merger and William A. McAfee and Francis H. Beam, now on the board of Affiliated, will also become directors.

"This merger," Wampler declared, "will allow the combined companies to provide a complete line of both air conditioning and heating equipment, with special emphasis on the increasingly important home field."

## MACK, CAPLAN NOW OWN WABASH MFG. CORP.

E. W. Mack and Robert E. Caplan have purchased the complete plant, receivables and inventory, patents and good will of the Wabash Mfg. Co. from its former owners, and have organized the Wabash Corp. as a completely independent company, not affiliated with any other company. The purchase and change of name and ownership was effective Oct. 1.

Mack, as president, and Caplan, as vice president, are now sole owners of the company, they have announced. Both men have had many years' experience in refrigeration manufacturing, engineering and sales.

The company will continue its policy of selling its products only through established refrigeration supply wholesalers.

## JOINS TEMPRITE BOARD

T. Kenneth Haven has been elected to the board of directors of Temprite Products Corp.

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**Shana's BIG LINE** is the **BIG NEWS** at the **BIG SHOW!**

**SHANA-Air**

*America's most comprehensive residential AIR CONDITIONING line for 1955!*

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See the Shana exhibit, booth 5-46, 12th International Heating & Ventilating Exposition, Commercial Museum and Convention Hall, Philadelphia, Jan. 24-28.

If you won't be at the show, write for additional information today. Specify whether dealer, distributor or manufacturers representative.

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**ALLIED STORE EQUIPMENT COMPANY**  
 116 - 129 N. Eleventh St.  
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January 29, 1954  
 Attention: Mr. R. L. Hendrickson

Allin Manufacturing Company  
 1153 West Grand Avenue  
 Chicago 22, Illinois

Dear Dick:  
 We have been using Allin Liquid Eye as original equipment on our large Super Market installations for some time.

We like Allin Liquid Eyes for our installations because they have proven to be top quality in design and construction. With the refrigerant aiding in making a tight seal, we have yet to have a "leaker" since we started using the styles you are now making.


It goes without saying that much time is saved on these installations because of the ease of determining when the systems are properly charged with refrigerant.

Cordially yours,  
**ALLIED STORE EQUIPMENT COMPANY**  
 (Signed) A. L. Robertson,  
 Service Manager

**LIQUID EYE®**

means:

- perfect refrigerant visibility.
- state-thru flow.
- leak-proof—high safety factor.
- spring loaded gaskets.
- standard wrench flats.
- instant analysis of refrigerant condition.



Sold by leading Wholesalers. Send for new Allin pocket-size booklet showing all Liquid Eye sizes & styles

**Allin MANUFACTURING COMPANY** 1153 W. Grand Ave.  
 Chicago 22, Illinois

# 400 Firms To Display New Products at Philadelphia

**M**ORE THAN 400 manufacturers of air conditioning, ventilating, heating and allied equipment will exhibit their newest products and developments at the 12th International Heating & Ventilating Exposition, scheduled for the Commercial Museum and Convention Hall, Philadelphia, from January 24 through 28.

Following is the most recent list of exhibitors, arranged in alphabetical order. Use it to identify the companies whose products you're interested in learning more about.

## A

A-J Mfg. Co.; A-P Controls Corp.; Acme Industries, Inc.; Acme Mfg. Co.; Acro Mfg. Co.; Crise Controls Div.; Addison Products Co.; Adelta Mfg. Co.; Air Control Products Inc.; Air Controls Inc.; Div. Cleveland Heater Co.; Air Devices, Inc.; Air-Maze Corp.; Air & Refrigeration Corp.; Airtemp Div., Chrysler Corp.; Airtherm Mfg. Co.; Alco Valve Co.; Aldrich Co.; Allen-Bradley Co.; American Air Filter Co.; American Artisan; American Blower Corp.; American Coils Co.; American District Steam Co.; American Furnace Co.; American Gilsonite Co.; American Iron & Steel Institute; American Machine & Metals, Inc.; DeBothezat Fan Div.; American Radiator & Standard Sanitary Corp.; C. L. Ammerman Co.; V. D. Anderson Co.; Anemostat Corp. of America; Armstrong Furnace Co.; Armstrong Machine Works; Arrow-Hart & Hegeman Electric Co.; Atlantic Pipebending & Fabricating Corp.; Auer Register Co.; Aurora Pump Co.; Au-Temp-Co Corp.; Auto-Flo Corp.; Automatic Devices Co.; Automatic Firing Corp.; Air-Path Products Co.; Allis-Chalmers Mfg. Co.; Ajax Boiler & Heater Co.; Acec Electric Corp.; Airfan Engineering Co.

## B

B-I-F Industries, Inc.; Bacharach Industrial Instrument Co.; Baltimore Aircoil Co.; Barber-Colman Co.; Aug. G. Barkow Mfg. Co.; Barnes & Jones, Inc.; Barry Blower Co.; Bell & Gossett Co.; Berger Furnace Corp.; Bett-Marr Mfg. Co.; Binks Mfg. Co.; Bonair Products, Inc.; Borg-Warner Corp.; Hydraline Products Div.; Brandes Co.; Brown Products Co.; Brundage Co.; Brunner Mfg. Co.; Buffalo Forge Co.; Burgess-Manning Co.; Architectural Products Div.; Burnham Corp.; Boiler Div.; Bush Mfg. Co.; A. M. Byers Co.; Harvey P. Bertram Co.; Brookside Products Co., Inc.; Bryant Heater Div., A.G.A., Inc.

## C

Cambridge Filter Corp.; Philip Carey Mfg. Co.; Carnes Corp.; Carrier Corp.; Carver Pump Co.; Century Electric Co.; Century Engineering Corp.; W. M. Chace Co.; Champion Blower & Forge Co.; Char-Gale Mfg. Co.; Chelsea Products, Inc.; Chicago Blower Corp.; Chicago Pump Co.; Chrysler Corp.; Airtemp Div.; Clarage Fan Co.; Clayton & Lambert Mfg. Co.; Cleaver-Brooks Co.; Boiler Div.; Cleaver-Brooks Co.; Burner Div.; Cleveland Heater Co.; Air Controls, Inc.; Cole Hot Blast Mfg. Co.; Coleman Co., Inc.; Columbia Burner Co.; Combustion Control Corp.; Combustioneer Div.; Steel Products Engineering Co.

Commercial Filters Corp.; COMMERCIAL REFRIGERATION AND AIR CONDITIONING; Committee on Steel Pipe Research; American Iron and Steel Institute; Condensation Engineering Corp.; Congress Drives Div.; Tann Corp.; Connor Engineering Corp.; Continental Air Filter, Inc.; Copeland Refrigeration Corp.; Corbman Bros.; Cory Corp.; Crane Co.; Crise Controls Div.; Acro Mfg. Co.; Curtis Refrigerating Machine Div.; Curtis Mfg. Co.; Cutler-Hammer, Inc.; Carbon Products Corp.

## D

Davidson Fan Co.; Dayton Rubber Co.; DeBothezat Fans Div.; American Machine and Metals, Inc.; Delavan Mfg. Co.; Delco Products Div. of General Motors Corp.; Delta Heating Corp.; Detroit Controls Corp.; Devices, Inc.; Dodge Corp.; Doerr Electric Corp.; Dole Valve Co.; Dollinger Corp.; Doyle Vacuum Cleaner Co.; Dravo Corp.; Drayer-Hanson, Inc.; Dielectric Products Co., Inc.; C. A. Dunham Co.; E. I. du Pont de Nemours & Co., Inc.; Kinetic Chemicals Div.; Durant Insulated Pipe Co.; Duro-Dyne Corp.; F. W. Dwyer Mfg. Co.; Dangan Electric Mfg. Co.; Daffin Mfg. Co.; Donaldson Div.; Marvin D. Shafer Co.

## E

Eagan Co., Inc.; Eckhart Mfg. Co., Inc.; Eddington Metal Specialty Co.; Electrigras Corp.; Electro-Air Cleaner Co.; Electro-Therm, Inc.; Emerson Electric Mfg. Co.; Empire Chemical Products Co.; Engel Sheet Metal Equipment, Inc.; George Evans Corp.; Excelsior Steel Furnace Co.; Elgen Mfg. Corp.; Ejoy Baseboard Mfg. Co.

## F

Fairbanks Co.; Farr Co.; Fasco Industries, Inc.; Fedders-Quigan Corp.; Federal Boiler Co., Inc.; Field Control Div., H. D. Conkey & Co.; Filtrix Corp.; Fitzgibbons Boiler Co., Inc.; Flexible Tubing Corp.; Flexonics Corp.; Food Machinery and Chemical Corp.; Peerless Pump Div.; Forest City Foundries Co.; Fostoria Pressed Steel Corp.; Frick Co.; Frigidaire Div.; General Motors Corp.; Fulton Syphon Div.; Robertshaw Fulton Controls Co.; Freeman Heating Div.; Illinois Iron & Bolt Co.

## G

Gallaher Co.; General Automatic Products Corp.; General Blower Co.; General Chemical Div.; Allied Chemical & Dye Corp.; General Controls Co.; General Electric Co.; Apparatus Sales Div.; General Filters, Inc.; General Fittings Co.; General Gas Light Co.; General Heating Products Co.; General Register Corp.; Gerwin Industries, Inc.; Thermo-Base Div.; Gibson Industries, Inc.; E. D.

Goodfellow Co., Inc.; Goodyear Tire & Rubber Co., Inc.; Goulds Pumps, Inc.; Governor Corp.; Graham Mfg. Corp.; Gustin-Bacon Mfg. Co.; General Electric Co.; Commercial and Industrial Air Conditioning Dept.; General Electric Co.; Weathertron Dept.

## H

Halstead & Mitchell; Arthur Harris & Co.; Hart & Cooley Mfg. Co.; Hastings Instrument Co., Inc.; Heat-Timer Corp.; The Heil Co.; Henry Furnace Co.; Herbster Products Co.; Herco Oil Burner Corp.; Div. of Herr and Co., Inc.; Hi-Flow Products, Inc.; Hoffman Specialty Co.; HomeEase Products Div.; Hydraline Products Div.; Borg-Warner Corp.; Hydrotherm, Inc.; Hy-Lo Burner Co., Inc.; Hastings Air Control, Inc.; Howard Industries, Inc.; Huck Mfg. Co.

## I

Ilg Electric Ventilating Co.; Illinois Engineering Co.; Illinois Iron & Bolt Co.; Freeman Heating Div.; Illinois Testing Laboratories, Inc.; Imperial Brass Mfg. Co.; Independent Register Co.; Industrial Sound Control, Inc.; Infra Insulation, Inc.; Ingersoll-Rand Co.; Insulating Concrete Corp.; International Heater Co.; International Oil Burner Co.; Iron Fireman Mfg. Co.; Iron Fireman Mfg. Co.; Petro Div.

## J

Jackson & Church Furnace Div.; Jefferson Electric Co.; Jenkins Bros.; Jenn Air Products Co., Inc.; Johns-Manville Sales Corp.; S. T. Johnson Co.; Johnson Service Co.; Janitrol Heating & Air Conditioning Div.; Surface Combustion Corp.

## K

E. B. Kaiser Co.; Kaustine Furnace & Tank Corp.; Kennard Corp.; Kent Co.; Kewanee-Ross Corp.; Kinney Mfg. Co.; Subsidiary of New York Air Brake Co.; Kody Blower Co.; Korlund Co., Inc.; Kritzer Radiant Coils, Inc.

## L

Lau Blower Co.; Lewin-Mathes Co.; Joseph E. Lewis & Co., Inc.; Libbey-Owens-Ford Glass Co.; Lima Register Co.; Lipman Refrigeration Div.; Yates-American Machine Co.; Lockformer Co.

## M-C-M

McCord Corp.; McDonnell & Miller, Inc.; McQuay, Inc.; Magnetrol, Inc.; Maid-O'-Mist; Mammoth Furnace Co.; Manville Boiler Co., Inc.; Marathon Electric Mfg. Corp.; Marietta Metal Products Corp.; Marley Co.; Marlo Coil Co.; Marsh Heating Equipment Co.; Masitral Co.; Mercoid Corp.; Metalbestos Div.; William Wallace Co.; Metals & Controls Corp.; Spencer Thermostat Div.; Metromatic Mfg. Co.; Metropolitan Refining Co., Inc.; Mid-Continent Metal Products Co.; Milwaukee Electric Tool Corp.; Milwaukee Gas Specialty Co.; Minneapolis-Honeywell Regulator Co.; Mitchell Mfg. Co.; Machine Manufacturing Co.; Monarch Mfg. Works, Inc.; Morrison Products, Inc.; Morrison Steel Products, Inc.; Morse-Smith Morse Co.; Paul S. Morton; L. J. Mueller Climatrol; Multi-Vent Div.; Pyle-National Co.; Morris Sheet Metal Works; Muncie Gear Works, Inc.; Magnaflow Pump Corp.

# Show

## N

Nash Engineering Co.; National Radiator Co.; National Radiator Co.; Viking Air Conditioning Div.; Herman Nelson Div.; American Air Filter Co., Inc.; John J. Nesbitt, Inc.; New York Air Brake Co.; New York Blower Co.; Niagara Blower Co.; Niagara Furnace Div.; Forest City Foundries Co.; Niagara Machine Tool Works; Norman Products Co.; National Heater Co., Inc.; National Heating Products Sales, Ltd.

## O

Olsen Mfg. Co.; Orr & Sembower, Inc.; Owens-Corning Fiberglass Corp.

## P

Pacific Steel Boiler Div., United States Radiator Corp.; Paragon Electric Co.; J. V. Patten Co.; Peerless Electric Co.; Peerless Pump Div.; Food Machinery and Chemical Corp.; Peerless Sales Div.; Penn Boiler & Burner Mfg. Corp.; Penn Controls, Inc.; Pennsylvania Furnace and Iron Co.; Perfection Stove Co.; Perflex Corp.; Petro Div., Iron Fireman Mfg. Co.; Phillips Drill Co.; Pittsburgh Plate Glass Co.; Fiber Glass Div.; Powers Regulator Co.; Pratt-Daniel Corp.; Thermobloc Div.; Preferred Utilities Mfg. Corp.; Pullman Vacuum Cleaner Corp.; Puroator Products, Inc.; Pyle-National Co., Multi-Vent Div.; Primer Products, Inc.; Patterson-Kelley Co.; Premier Co.

## Q

Quiet-Heat Mfg. Corp.; Quincy Stove Mfg. Co.; Quickdraft Co., Div., Herring-Hall-Marvin Safe Co.

## R

R. C. S. Tool Sales Corp.; Radiant-Ray Radiation, Inc.; Radiant Utilities Corp.; Radio Corp. of America, Engineering Products Div.; Randall Graphite Bearings, Inc.; Redmond Co., Inc.; Reflectal Corp., Subsidiary of Borg-Warner Corp.; Remington Arms Co., Inc.; Republic Products Co.; Research Products Corp.; Rheem Mfg. Co.; Richmond Engineering Co., Inc.; Richmond Radiator Co.; Ric-wil Co.; Ridge Tool Co.; Rittling Corp.; Roberts-Gordon Appliance Corp.; Robertshaw-Fulton Controls Co.; Fulton Sylphon Div.; Rockwell Spring and Axle Co.; Rome-Turney Radiator Co.; F. C. Russell Co.

## S

Sarco Co., Inc.; Schecter Bros. Co.; Scully Signal Co.; Sequoia Mfg. Co.; Servel, Inc.; Shana Mfg., Inc.; Siemon Mfg. Co.; Skuttle Mfg. Co.; A. O. Smith Corp.; H. B. Smith Co., Inc.; Sparkler Mfg. Co.; Spencer Heater, Locomotive Div., Avco Mfg. Corp.; Spencer Thermostat Div., Metals & Controls Corp.; Spirol-Fin Corp.; Sparlan Valve Co.; Sprague Electric Co.; Square D Co.; Standard Stamping & Perforating Co.; Steel Products Engineering Co.; Combustion Div.; Stephens-Adamson Mfg. Co.; Stewart Mfg. Co., Inc.; Stewart

*Continued on page 70*

## WHEN THE SHOW IS OPEN

12th International Heating & Ventilating Exposition, Commercial Museum and Convention Hall, Philadelphia, will be open during the following hours:

Monday, Jan. 24	2 P.M. to 10 P.M.
Tuesday, Jan. 25	12 Noon to 10 P.M.
Wednesday, Jan. 26	12 Noon to 10 P.M.
Thursday, Jan. 27	12 Noon to 10 P.M.
Friday, Jan. 28	12 Noon to 6 P.M.

## Here's Lineup of Technical Talks On ASHACE Meeting Program

**F**EATUREING Dr. Milton S. Eisenhower, president of Penn State University, as the banquet speaker, the 61st annual meeting of the American Society of Heating & Air Conditioning Engineers will open on Jan. 23 at the Bellevue-Stratford Hotel in Philadelphia, in conjunction with the 12th International Heating & Ventilating Exposition.

Registration will begin on Sunday, Jan. 23. The first technical session Monday will open with C. P. Yaglou on "Ventilation Requirements for Removal of Tobacco Smoke." Other speakers will be: K. T. Whitby on "A Rapid General Purpose Centrifuge Sedimentation Method for Measurement of Particle Size Distribution"; and "Evaluation of Panel-Type Air Cleaners by Means of Atmospheric Dust", by H. A. Endres, W. T. Van Orman and R. P. Carter, Jr. The 12th International Exhibit will open that afternoon.

Tuesday session will open with a discussion on "Preliminary Studies of Heat Removals by Cooled Ceiling Panel", by L. F. Schutrum and John Vouris; "Measurement of Angular Emissivity", by A. Umur, G. V. Parmelee and L. F. Schutrum; "Circuit Analysis Applied to Load Estimating, Phase II", by H. B. Nottage and G. V. Parmelee.

The third technical session on Wednesday will have four major discussions. They are: "Gas Is an Important Factor in the Thermal Conductivity of Most Insulating Materials, Part II", by R. M. Lander; "A New Method for Selection of Outside Design Temperature", by M. L. Ghai and R. Sundaram; "Study of Liquid-to-Liquid Heat Transfer in Hot Water Heaters", by F. W. Hutchinson, L. J. LaTart and N. W. Smith; "Cloudless Day Radiation", by R. C. Jordan and J. L. Threlkeld.

At the annual banquet Wednesday evening, Dr. Eisenhower will speak.

At the final technical session, three subjects will be discussed. They are: "Paths of Horizontally Heated and Chilled Air Jets", by Alfred Koestel; "Air Conditioning of Multi-Room Buildings", by R. W. Waterfill; and "Effects of Weather Conditions on Cooling Unit Operation in a Residence", by H. T. Gilkey and S. Konzo.

The exposition will be open on Friday but all other activities will be concluded on Thursday. In addition to the banquet Wednesday evening, there are several other special committee sessions along with the usual number of social functions for the entertainment of members and guests.

## PHILADELPHIA SHOW . . .

Continued from page 69

Warner Corp.; United States Machine Div.; Strong, Carlisle & Hammond Co.; Sturtevant Div.; Westinghouse Electric Corp.; Sunbeam Air Conditioner Div.; American Radiator & Standard Sanitary Corp.; Sundstrand Engineering Co.; Sundstrand Machine Tool Co.; Sun-Ray Mfg. Corp.; Surface Combustion Corp.; Synchromatic Corp.; Slant-Fin Radiator Corp.; Simplaire Co.; Synchronous Flame, Inc.

### T

Taco Heaters, Inc.; Tann Corp.; Congress Drives Div.; Tecumseh Products Co.; Temco, Inc.; Thatcher Furnace Co.; Thermobloc Div.; Prat-Daniel Corp.; Thermowheel, Inc.; H. A. Thrush & Co.; Timken Silent Automatic Div.; Rockwell Spring and Axle Co.; Titus, Inc.; Titus Mfg. Corp.; Torrington Mfg. Co.; Trane Co.; Trion, Inc.; Tuttle & Bailey, Inc.; Typhoon Air Conditioning Co., Inc.

### U

Union Asbestos & Rubber Co.; Union Electric & Mfg. Co.; United States Air Conditioning Corp.; United States Electrical Motors, Inc.; United States Machine Div.; Stewart-Warner Corp.; United States Radiator Corp.; United States Radiator Corp.; Pacific Steel Boiler Div.; United States Register Co.; Universal Diffuser Corp.; Utility Appliance Corp.; United States Rubber Co.; Utility Fan Corp.

### V

V. & E. Products, Inc.; Van-Packer Corp.; Velan Engineering, Ltd.; Velocity-Power Tool Co.; Vibration Eliminator Co.; Viking Air Conditioning Div.; National Radiator Co.; Vulcan Radiator Co.; Vibration Mountings, Inc.

### W

Wagner Electric Corp.; Walker Mfg. and Sales Corp.; William Wallace Co.; Metalbestos Div.; Walton Laboratories, Inc.; Waterfilm Boilers, Inc.; Waterman-Waterbury Co.; Watts Regulator Co.; Wayne Home Equipment Co., Inc.; Webster Electric Co.; Webster & Co.; Weill-McLain Co.; Westinghouse Electric Corp.; Westinghouse Electric Corp.; Sturtevant Div.; White-Rodgers Electric Co.; Whitehall Engineering Co.; Williams Div.; Eureka Williams Co., Div. of Henney Motor Co., Inc.; Windmaster Corp.; L. J. Wing Mfg. Co.; Worthington Corp.; Wheelco Instruments Div.; Barber-Colman Co.

### Y-Z

Yates-American Machine Co.; Lipman Refrigeration Div.; York Corp.; York-Shipley, Inc.; Young Radiator Co.; Young Regulator Co.

Zatco Metal Products Co.; Zonolite Co.; "Z" Crete Div.

## AGENTS FOR "FLICA" TXV PRODUCTS APPOINTED

Koldex International, Inc. announces the appointment of the following manufacturer's representatives to handle their line of "Flica" thermostatic expansion valves:

George B. Wilson & Son, Baltimore, for eastern Pennsylvania,

southern New Jersey, Delaware, Maryland, District of Columbia, and Virginia; Lloyd Backstrom Co., Portland, Ore., for Oregon, Idaho, Washington, Western Montana, and B. C.; Merle G. Haynes, Berkeley, Calif., for California, Nevada, Arizona, New Mexico, and the city of El Paso, Tex.; C. G. Kane, University City, Mo. for Missouri, southern Illinois, Kansas, Arkansas, and Oklahoma.

## McCOMBS SUPPLY ADDS 3 NEW SALES ENGINEERS

George Orr, R. A. Richardson and L. D. Stacy have joined McCombs Supply



G. Orr



R. A. Richardson



L. D. Stacy

ply, Dallas, and Airtemp Sales Corp. as district manager, will cover the Denver area. Richardson, formerly with Sandia Corp., AEC contractor, and with the York distributor in Albuquerque, will be in the Denver office; and Stacy, formerly with Frigidaire, most recently in El Paso, will headquarter in Colorado Springs and represent McCombs in southern Colorado.

## TO SELL HEAT PUMPS

Appointment of Fisher Oil Co., Muncie, Ind. as a retailer for the G-E Weathertron in the Delaware County area has been announced by the General Electric Co.'s Weathertron Dept.

## VICTOR SALES & SUPPLY MOVES AFTER 21 YEARS

After 21 years in its original location at 2222 Arch St., Victor Sales & Supply Co., pioneer Philadelphia refrigeration and air conditioning parts wholesaler, moved in December to a new headquarters building at Wingohocking St. East of Whitaker Ave., according to president Alex Holcombe, Jr.

The new quarters are larger and better arranged, with three large loading docks and adjacent to a railroad siding. Office, showroom and warehouse will be on one level, and there is room for at least 25 automobiles to park in the company's lot, off the street.

The new location, Holcombe says, is in the heart of the rapidly expanding Greater Philadelphia industrial area, brought about primarily by the new U. S. Steel plant located 20 miles away on the Delaware river. It is on a throughway connecting to the main traffic arteries in all four directions, and only 20 minutes by car to the center of Philadelphia.

Francis J. (Jim) Coffey becomes general manager of the business as of January 1, 1955, according to Holcombe.

## C. Q. SHERMAN ASSOCIATES IS FIRM'S NEW NAME

Charles Q. Sherman, president of Refrigerated Equipment Sales Corp., Mount Vernon, N. Y., has announced that the firm will now be known as C. Q. Sherman Associates, Inc. The newly named corporation will continue its activities as national merchandising sales organization for such manufacturers as Brewer-Titchener Corp. of Binghamton, N. Y., manufacturers of low temperature ice cream and frozen food display cases, dairy cases, ice cube makers, and blood banks; Federal Tool and Machine Co. of Long Island City, N. Y., manufacturers of the Federal Soft-Serv ice cream converter, and Stoddard Industries, Inc. of Chicago, manufacturers of the Cold Traveler refrigerated truck cabinet and new condensing unit filters.

**BUY FROM YOUR REFRIGERATION WHOLESALER**



## LEON BUEHLER ELECTED ASRE HEAD FOR 1955

The American Society of Refrigerating Engineers installed the



L. Buehler, Jr.

following national officers and directors for 1955 at the Society's 50th annual meeting held in Philadelphia Nov. 28-Dec. 1.

President, Leon Buehler, Jr., chief refrigeration engineer, Creamery

Package Mfg. Co., Chicago; first vice president, Carlyle M. Ashley, chief development engineer, Carrier Corp., Syracuse; second vice president, Hermann F. Spoehrer, vice president and treasurer, Sporlan Valve Co., St. Louis; treasurer, Cecil Boling, president, Bush Mfg. Co., West Hartford, Conn.

Directors — three years: Daniel D. Wile, vice president and chief engineer, Refrigeration Engineering, Inc., Los Angeles; Gayle B. Priester, air conditioning engineer, Consolidated Gas Electric Light and Power Co., Baltimore; Harold M. Hendrickson, associate professor, Dept. of Mechanical Engineering, University of Washington, Seattle; Justin Neuhoff, manager, engineering, Commercial and Industrial Air Conditioning Dept., General Electric Co., Bloomfield, New Jersey.

Director — two years: Joseph R. Chamberlain, chief engineer, industrial products, York Corp., York, Pa.

The new officers will retain office for a period of 18 months, in order to coordinate their terms with those of the Society's 36 Section officers.

The holder of more than 25 patents on refrigeration equipment and processes, Buehler has devoted his entire career to the refrigeration industry. Subjects which he has been particularly concerned include ammonia and freon compressors, ice making equipment, fermentation, gas recovery, automatic refrigeration systems and bulk farm milk cooling tanks.

**BUY FROM YOUR  
REFRIGERATION WHOLESALER**

## F-22 Now Available In Disposable Containers

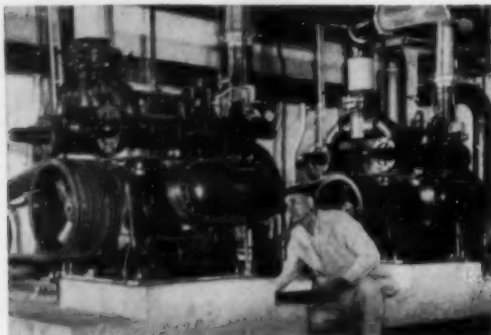


**IN THE PLANT** of Eston Chemicals Div., American Potash & Chemicals Corp., newly designed "Charg-A-Can" disposable containers are filled with the proper amount of Freon-22. The containers are then placed in the basket at the left to be immersed in water to detect possible leaks. The new type container was necessitated by the fact that F-22 is packaged under 150 lbs. pressure, nearly double that of refrigerants previously marketed in this form. Design of the new cylinder, which measures 3" in diameter and 10" long, is credited to four Eston employees, George S. Wheaton, William J. F. Francis, Russell Sunderlin, and George A. Schnier.

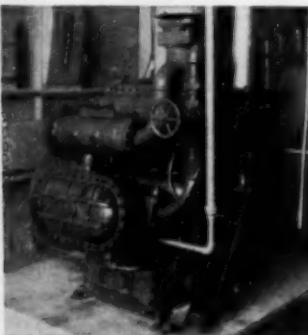


**IN THE FIELD**, the new disposable F-22 container can be used as handily as any other packaged refrigerant for charging refrigeration systems, thus cutting down on labor, material, and time by making it possible to service the equipment on the job instead of bringing it into the shop.

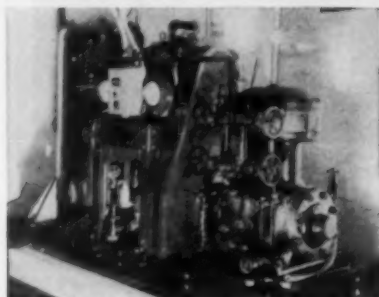
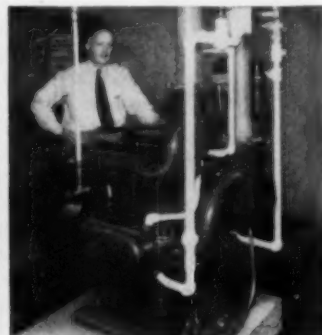
Frick "ECLIPSE" Type PF compressors, built in six sizes up to 150 H.P. and having 2, 3, 4, 6 or 9 cylinders, may be used with any refrigerant at any temperature. They are ideal for such work as air conditioning, marine service, watercooling, food storage and processing.



"ECLIPSE" Type AHP compressors are available for regular ammonia service under high operating pressures. These heavy-duty machines are built in three sizes with 3, 6, or 9 cylinders of 3 1/2" bore and 4 1/4" stroke.

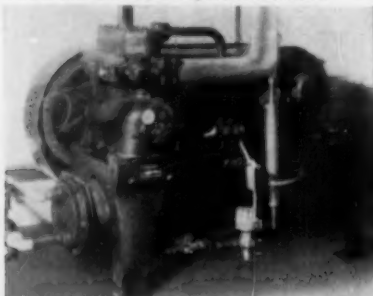


"ECLIPSE" Type PAB booster compressors, built in six sizes, are noted for their dependability and efficiency. Small frosted lines cool the cylinder valve plates with direct-expansion refrigerant—a patented Frick feature.



Combined ammonia units are manufactured in three sizes ranging from 2 1/2 to 10 tons of refrigeration. They are a popular choice for food service, cooling drinking water, making ice, dairy plants, etc.

Frick low pressure units are built in 36 sizes from 1/4 to 15 hp. Condensers on smallest machines are air cooled, on intermediate sizes, air or water cooled; and larger sizes, water cooled.



**COMPRESSORS**

## the Refrigeration Industry's Most Comprehensive Line 83 Types & Sizes

When you specify Frick machines you have the widest choice of models, and are sure of getting a compressor exactly suited to your needs.

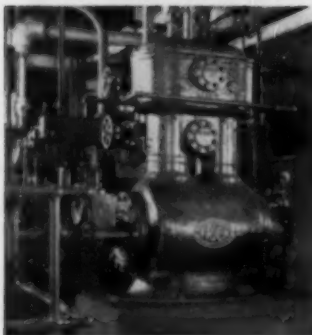
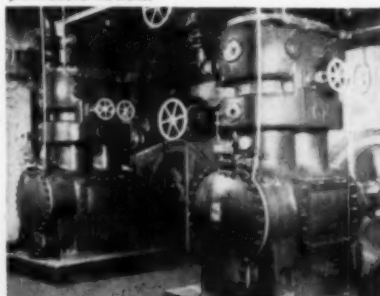
Are you handling one of the Freons, or ammonia, or some other refrigerant? At what temperature? Whatever your load, there's a Frick machine built to meet every commercial and industrial requirement.

Tell us about your cooling work, and we'll send you the full facts and figures on Frick equipment to match the job. Branches and Distributors in principal cities, or write directly to

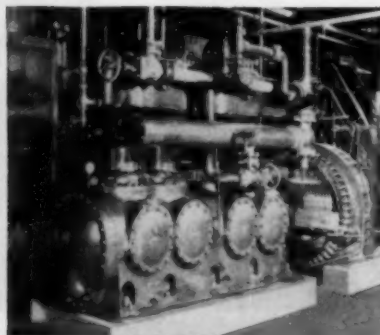


"ECLIPSE" Type PF low pressure units are furnished in 15, 20, 30, 40 and 60-hp. sizes. Shell-and-tube coolers may be added to form compact water chilling units.

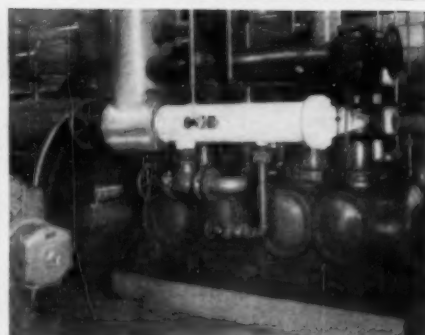
Frick Company pioneered the development of the booster compressor. Since 1929 these Type PB machines, built in seven sizes, have been regularly installed by ice cream and quick freezing plants all over the world.



Frick two-cylinder enclosed Type V.S.A. ammonia compressors have been perfected over the past 40 years, until today they are the standard of the industry. They are available in capacities from 2 to 300 tons, in 11 sizes.



Four-cylinder Type V.S.A. enclosed compressors are normally offered in four sizes with capacities up to 800 tons. Furnished with capacity controls on each cylinder, these machines give the user maximum flexibility and durability on heavy-duty refrigerating service, such as in the food and chemical industries.



Frick four-cylinder Type PB enclosed V.S.A. ammonia booster and Freon-12 compressors are available in 15" by 10" and 17 1/2" by 12" sizes. Seabrook Farms, the world's largest quick-freezing plant, has eight of the larger size.

## COOLING

Circulation and  
Humidity Control

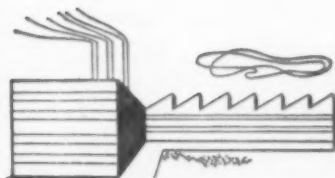
## HEATING

# AIR CONDITIONING

## *Section*



**COMMERCIAL**



**INDUSTRIAL**



**INSTITUTIONAL**



**RESIDENTIAL**

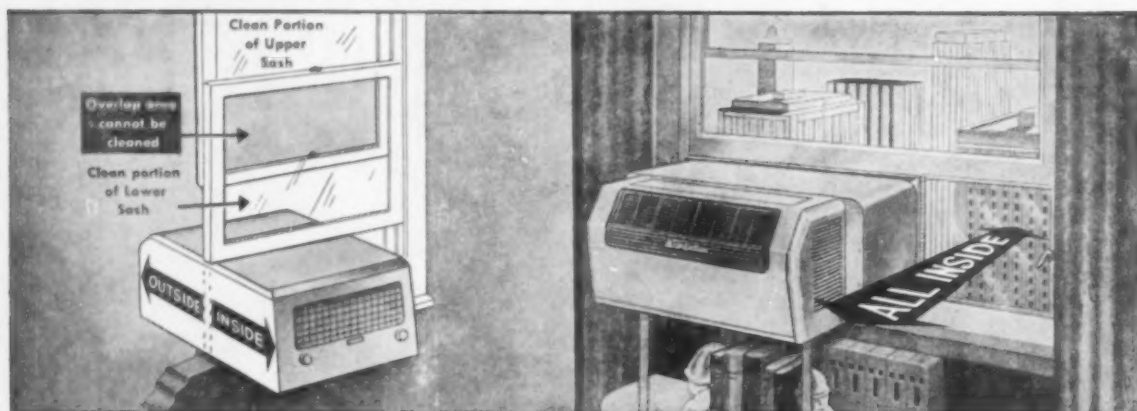
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# REVOLUTIONARY

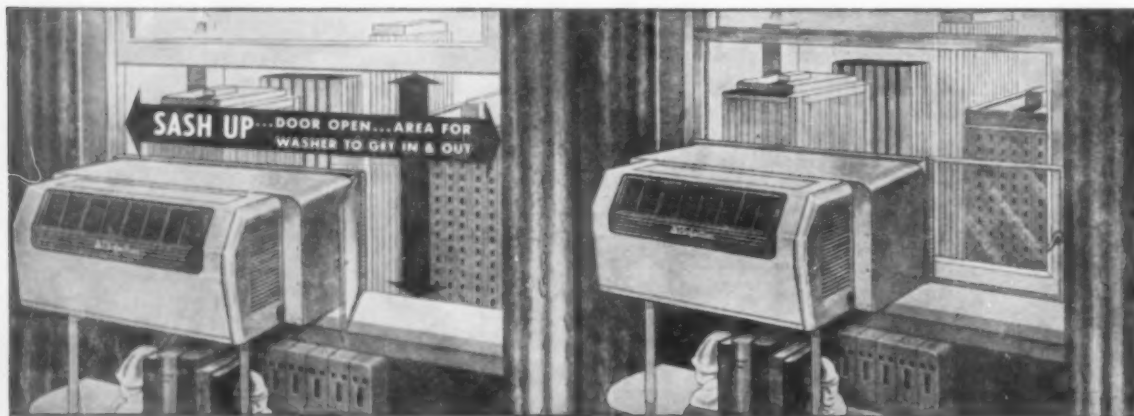
Air conditioner **ENTIRELY INSIDE** the glass line!

Here's why Perfection helps you "crack" profitable office building, hotel, motel and hospital markets...



**ORDINARY INSTALLATION:** Conventional room air conditioners must be installed partly inside, partly outside the window. Windows can never be fully closed or fully cleaned. This kind of installation must be permanently weather-sealed. Most building managements frown on such installations.

**NEW PERFECTION "Inside-the-glass line" METHOD:** With Perfection's exclusive adapter kit the unit can be installed *completely* inside the window. *Either* window sash can be **COMPLETELY** lowered or raised behind the unit. Building management gives its unqualified approval to the Perfection Room Air Conditioner.



**BOTTOM SASH UP:** With adapter door open and bottom sash up, window washers have plenty of room to get in and out when window cleaning is required.

**BOTTOM SASH DOWN:** Because lower window sash can be raised or lowered at will, **COMPLETE** cleaning of **BOTH** sides of upper and lower sash is possible.

## Perfection HAS ALL THE ANSWERS

- Doesn't disfigure the face of building.
- Simplifies window washing.
- No dripping to stain building or annoy pedestrians.
- No winter storage problem.
- Four capacities in identical cabinets.
- No permanent weather-seal required.

Write or call... Perfection Steve Company, 7413-A Platt Avenue  
Cleveland 4, Ohio

YOUR HOME DESERVES

# Perfection

Circle No. 58 on Reader Service Card





● **QUEUES** of curious "lookers" like these lined up to inspect this model home can mean many a sale to the dealer whose air conditioning unit is on display inside. Here's how one dealer capitalizes on this important fact.

## "Dream" Homes Make Sales Come True

**Y**EAR-ROUND residential air conditioning, despite its steadily increasing acceptance, is still very definitely in the promotional stage of development. The air conditioning dealer or contractor who realizes this fact, and seizes on every opportunity to capitalize on every promotional opportunity, is well on his way toward building a healthy volume of business in the residential field.

One of the basic steps in the promotion of any product is to expose it to the greatest possible number of prospects in such a way that it will capture their imagination, increase their knowledge of the product and what it will do for them, and instill in them a desire for ownership.

One of the most effective means of accomplishing these ends with residential air conditioning equipment, in the opinion of Walter T. Botkin, president of Buckeye Refrigeration Co., Columbus, Ohio, is to tie in with one of the home builders participating in the local "Parade of Homes", or similar real estate promotion.

Through just such a tie-in, the Buckeye organization arranged to have one of the Chrysler Airtemp residential air conditioning systems which it handles incorpo-

rated into the model home built by S. L. Marcum, local construction contractor, for one of the Parade of Homes programs sponsored by the Columbus Home Builders Association. The Buckeye firm then proceeded to promote this installation in every possible way.

In the first place, it was arranged to have the air conditioning featured heavily in the announcement ads run by the builder in the local newspapers to feature his entry in the Parade of Homes. "First in Columbus area, fully Air Conditioned Home under \$20,000", ran a typical heading. This type of advertising helped stir up the initial interest, Botkin reports.

As an associate member of the Columbus Home Builders Association, the Buckeye firm then proceeded to fan this interest through every conceivable contact. Just as an example, Buckeye offered to install residential air conditioning systems at a 5% discount in the homes of any fellow members of the Association.

When the Parade of Homes promotion actually got under way, Botkin saw to it that his company's air conditioning equipment in the Marcum home was shined up and displayed to best advantage, and that a member of the Buckeye organization was on hand at

*Continued on page 120*



## 360 square feet of CUSTOMER

SOMETIMES the smallest establishments are the most in need of air conditioning, and so are the easiest to sell for the salesman alert enough to recognize the opportunity. All of which is just another way of repeating that old sales axiom that "you can't judge a prospect by the size of his business".

A perfect case in point is The Dog House, an 8-stool, short-order lunch stand in Youngstown, Ohio. Overall, the exterior of this establishment measures only 12 x 30', with the service area occupying 12 x 18' of this space. Yet the J. H. Baum Heating Co. installed in this establishment a 3-hp Usairco packaged air conditioning unit, complete with the necessary ductwork, provision for heating, and the required temperature and humidity controls.

Actually, this installation presented even more of a design and engineering job than many larger systems, because of the limited space in which to locate the equipment and the necessity of moving air at a rapid rate in this small conditioned area without creating conditions which would be uncomfortable for either customers or employees. The need for reasonably close

humidity control further aggravated the problem.

The one factor on the favorable side was that the air conditioning was figured on at the time the new building was planned. The management's experience with one other similar establishment in town had convinced them that air conditioning in the new Dog House unit was a "must".

Design conditions for the system in this new installation were set at 75 F dry bulb and 95 F wet bulb, with 40% relative humidity.

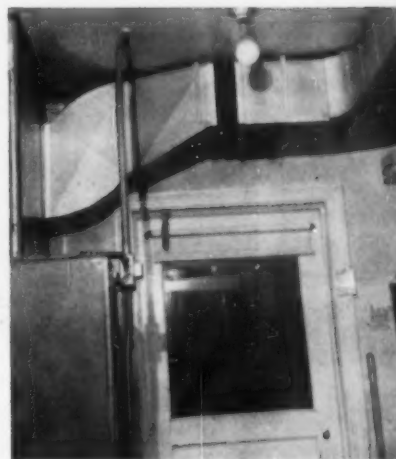
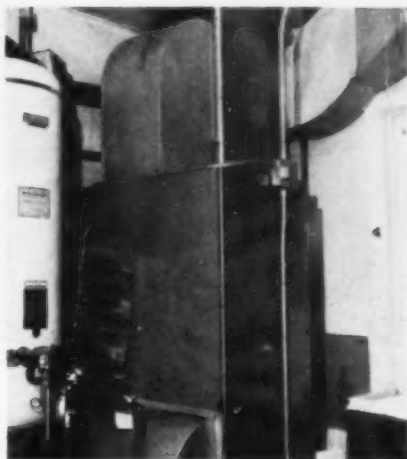
Complicating this design problem were such factors as the amount of heat generated by the cooking equipment in these confined quarters and the fact that the two side walls of the establishment were constructed of clear glass from counter height right up to the ceiling. It was important to keep these glass areas clear of fog during all kinds of weather, for otherwise the stand would lose much of its visual merchandising appeal.

To handle these problems, the 3-hp conditioner was jammed into one corner of the crowded storage and processing area in the rear of the building, with a

A 12 x 30-foot lunch stand may not look like much of a prospect for air conditioning, but its need for such equipment can be far greater than that of many places several times its size.



**HERE ARE THE BASIC ELEMENTS** of the complex but compact 3-ton air conditioning system designed and installed by a Youngstown, Ohio, contractor to meet the exacting requirements of the diminutive diner show on the facing page. At left, this



view of the serving area shows both the supply and return grille. Center photo shows the conditioner and duct heater crammed into one corner of the utility room, while the photo at right shows the duct leading from the conditioner to the main supply outlet.

75,000-Btu duct heater mounted immediately above it. A fresh air intake was provided from the side of the unit directly to an opening through the outer wall of the building.

A stainless steel heat exchanger was installed so that the unit could blow straight through without danger of corrosion, rather than by-passing in the usual manner. This arrangement cut down on the amount of ductwork required.

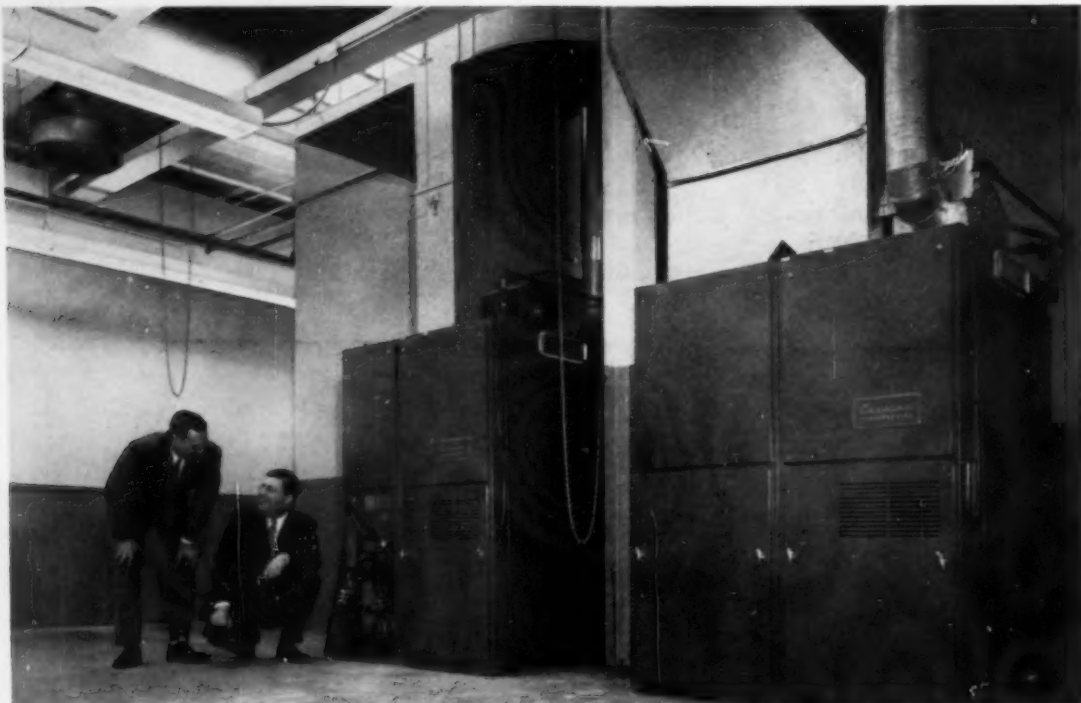
Ductwork was installed leading from the duct heater, across the rear of the storage room, and down the opposite side of this area to a high-wall discharge grille located in the wall separating the storage room from the serving area. One outlet was cut into the bottom of this duct to provide some conditioning for the storage area, and outlets were also run off the side of this duct to supply conditioned air to the two toilet rooms.

The return duct was laid under the cement floor of the building, leading from a return grille mounted at floor level in the same wall as the supply grille back to the base of the air conditioning unit.

A Minneapolis-Honeywell thermostat and humidistat were mounted together on the end wall of the serving area, directly opposite the wall in which the supply and return outlets were installed.

The exhaust fan mounted directly over the cooking area was sized according to the amount of fresh air brought into the building. This exhaust fan was set for continuous operation at all times, so as to provide constant air motion to help keep the large window areas free of steam. It was necessary to synchronize blower operation with this exhaust fan in order to achieve balanced control at all times.

Because of the delicate nature of the control balance required for this particular application, it was necessary to educate the employees of the diner to keep both the doors and the service window closed at all times when not in use. And to make doubly sure that this delicate balance wasn't disturbed, once it had been achieved, the switch was removed from the exhaust fan and the knobs were taken off the controls so that it would be impossible for the help to tamper with them.



**TWO OF THE FOURTEEN** residential air conditioners serving Horizons, Inc.'s laboratories are examined by Paul Maybaum of Horizons, Inc. and Bill Kanda of Cleveland Electric Illuminating Co.

## These Residential Units Went **COMMERCIAL**

**TWO LAB SCENES**, showing variety of air outlets used on system.



**A**N outstanding example of how residential year-around air conditioning units can "go commercial" — and provide the customer with a more efficient, more flexible, more economical to operate and much less expensive to purchase system in doing it — is the installation recently completed by Refrigeration Sales Corp. for Horizons, Inc., in Cleveland.

Horizons, Inc. is an organization of research scientists which was formed in 1946 to conduct sponsored research in the field of physics, ceramics, metallurgy, electronics, chemistry and mechanics. From a modest beginning in a small cellar laboratory, the organization has grown into an important research group. Its clients include both government departments and



leading industrial concerns, and much of its work is "classified" in nature.

Earlier this year, the company had an opportunity to rent a building, formerly occupied by a laundry, which was located just next door to its offices, to obtain the extra room needed for its expanding activities. But partitioning added to the already tough enough task of keeping the entire 20,000 sq. ft. of area well ventilated and at comfortable temperature.

### Zoning Was Important

Principal problem was the necessity of supplying conditioned air to a number of separate laboratory areas — 14 of them, to be exact — all of which would not require air conditioning at the same time. Because of the nature of the experiments that Horizons' scientists conducted, several of them might be required to operate over a week-end, for instance, while other laboratories in the building would not be in use. This made zoning desirable, so that temperatures and humidities in the individual areas could be regulated as required, independent of one another.

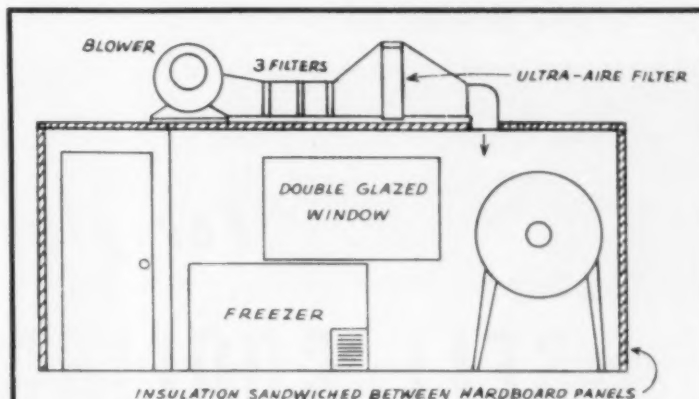
### Residential Units Used

All of this added up to a system that had to be a little special. One answer, of course, was a central station job — but the zoning requirements already mentioned (where one lab might be running a 24-hour test, and the one next to it be shut down) pretty much ruled this out on a basis of operating expense, since the entire plant might have to be operated to serve just one or two laboratories.

The problem was solved by using 14 individual year-round Carrier residential air conditioning units, each of them serving an individual laboratory area. In size, the units range as follows: four are 2 hp, three are 3 hp, five are 5 hp and two are of 7½ hp capacity.

By using the year-around units, says Howard Haney of Refrigeration Sales Corp., the company was

*Continued on page 107*



**IN THE STERILE ROOM** of Princeton Laboratories, Inc., the flow of incoming air from the special filter arrangement is regulated by a pull-chain. Exhaust air from the sterile room passes through the compressor compartment of the freezer, thus removing its heat from the room. The 9 x 16 x 7' room was constructed of Masonite panels inside and out, with glass fiber insulation. All joints are caulked.

## A Clean Installation

**A**N air-conditioning problem in a sterile room used by Princeton Laboratories, Inc., Princeton, N.J., for the preparation of hormones and enzymes, has been solved by installation of a single dry filter system. Installation was made by C. Page, local contractor.

Effectiveness of this system was demonstrated by preliminary tests in which cultural plates were placed directly in the air stream from the ventilating duct in the ceiling of the sterile room for periods of one hour without bacterial contamination of the cultures.

Installation of the equipment was comparatively simple. The system consists of a sheet metal duct into which four removable filters are clamped and sealed, and a standard blower driven by a ¼-hp motor. This built-up unit is mounted on top of the sterile room in line with an opening through the ceiling below. The first three of the four filters are 10 x 20 x 1" fiber-glass units which remove the largest particles from the air. The fourth is an "Ultra-Aire" filter 24 x 24 x 5⅞" overall which is guaranteed to be 99.95 percent effective against particles 0.3 micron in diameter.

The filter unit specified by Dr. William Kleinberg, director of the laboratories, has an initial pressure drop of only 0.2" of water at the maximum (100 cfm) flow rate used in this system. It is expected to give at least a year's service before replacement.

The filter in use at the Princeton Laboratories consists of about 150 sq. ft. of filter paper fan-folded over special corrugated paper spacers which give maximum surface exposure. The filter paper was originally developed for the Chemical Warfare Service and was adopted for space filter use by the Atomic Energy Commission.

The filter system delivers 50 to 100 cfm of fresh, sterile air. This permits personnel to work in the room continuously instead of for short periods during which no fresh air could be safely added to the 850 cu. ft. of air sterilized only by ultra-violet light. Air is exhausted from the sterile room through the compressor compartment of a freezer unit which was provided with a sealed air duct through the wall. Air flow through this unit removes the heat generated by the compressor.

*For plus profits ....*

# SELL COOLING TOWERS

*with small packaged air conditioners*

**P**ROVE to the prospect that the equipment will pay for itself, and you'll have little trouble in selling cooling towers to buyers of even the smallest packaged commercial air conditioners. At least that's the experience reported by United Refrigeration Service Co. of Columbus, Ohio.

During the past year the United firm has been able to sell cooling towers in conjunction with some 70% of the packaged commercial air conditioning units installed by this organization. This is a "plus" piece of business which has put a comforting bulge in the company's profit picture, and it points the way to other dealers and contractors looking for a way to "beef up" their sales volume.

The whole problem, of course, boils down to one of water costs, both supply and disposal, involved in the operation of the air conditioning equipment. And the "pays for itself" angle can make sense in any area such as Columbus where water costs and sewer taxes are high enough to make water savings an important consideration.

Based on local rates, United's salesmen can show a prospect in black and white that a cooling tower installed with a 5-ton packaged air conditioner will pay for itself inside of three years in water savings. Here is the arithmetic:

A 5-ton air conditioner unit will use, under normal circumstances, approximately 500 gallons of water per hour. At Columbus water rates this means that the customer will be paying approximately \$2 per day for water.

Figuring very conservatively, and deducting the added power costs incurred by the cooling tower and pump, United salesmen can prove on paper that the water conservation effected by a 5-ton cooling tower

will approximate a dollar-and-cents saving to the customer of \$300 per year. Installed cost of a 5-ton tower is approximately \$800.

On this basis, simple arithmetic shows that the cost of the tower would be amortized in less than three years. This makes it a good, sound investment from the standpoint of even the most hard-headed business man.

To bolster this sales story, United makes a practice of imprinting manufacturer's literature on cooling towers with a rubber stamp showing savings effected under Columbus water rates for 3, 5, 7, and 10-ton installations. This specific information, directly tied in with local conditions, points up the generalized savings story contained in the printed piece and increases its impact on the prospect.

In all its selling pitch on cooling towers, the United organization completely ignores the fact that in Columbus, as in many other communities across the country, the time is coming when the installation of some sort of water conservation devices with water-cooled air conditioning equipment will be made compulsory through legislation.

While admitting that publicity in the local newspapers on Columbus water shortage problems has softened the resistance of many cooling tower prospects, the company's management feels that "fear" or "scare" appeals have no place in a sound selling program. They prefer to rely on the convincing economic appeal of dollars-and-cents savings.

Time was, they point out, that this savings story didn't make sense in the smaller sizes of equipment. It used to be that you couldn't use this sales approach for any equipment of less than 10-ton capacity, because

*Continued on page 121*

**AGAINST THE WALL . . .**



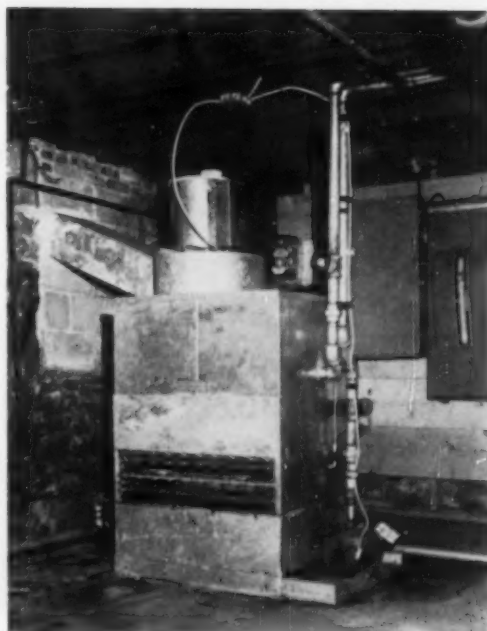
**ON THE ROOF . . .**



**FOUR WAYS YOU CAN MOUNT SMALL COOLING TOWERS**



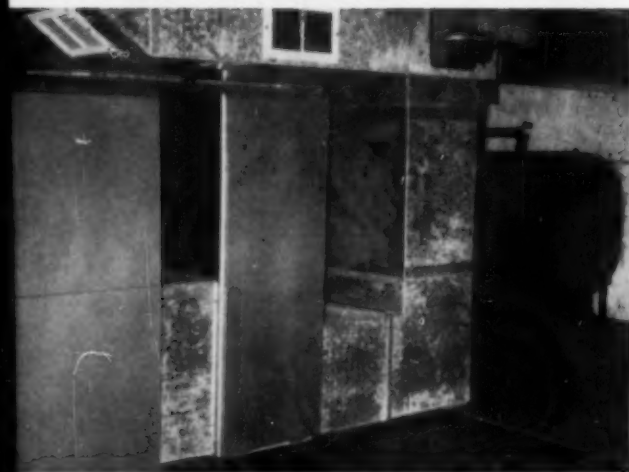
**ON THE GROUND . . .**



**IN THE BASEMENT . . .**

*This dealer's experience  
proves that air conditioning  
is a year-around business*

## He's Selling



**NO SPLIT SYSTEMS** is a Mauller "must", regardless of the size of job. Here a 3-ton cooling unit is used in a medium-priced home with an oil-fired heating system.

**W**OULD you say that selling 122 year-around residential air conditioning systems — none of them in connection with a promotion-type new homes project — was a fairly acceptable annual sales record?

Would you say that getting signed orders for 16 residential year-around jobs, to be installed during January, was some indication that there's really no off-season for air conditioning equipment, if you're willing to work at selling it?

Well, that's the record hung up by Gus Mauller Jr. and his Mauller Air Conditioning organization, who sell Bryant air conditioning and heating equipment in the St. Louis metropolitan area. It's a record which a good many air conditioning sales organizations would very much like to boast of, and one which any dealer might well copy.

And one of the important points is that Mauller has compiled this record with a staff of two part-time salesmen and three full-time service men . . . and that he places service on a par with sales when it comes to keeping year-around air conditioning systems "sold".

Gus Mauller likes to say that "the only air conditioning job I really sold was the first one I installed; all the others have been largely the result of the recommendations of satisfied customers." But the real story includes a little more than that.

### **Do It Right, Or Not At All**

It includes, first of all, the determination to give every customer the best possible job, or none at all. "If the job's not going to be done right, I don't want to do it," is Gus' way of putting it. "On most of the jobs I've sold, I've been one of the high men, seldom low. That's because I insist on doing the job right. Often times I've had the opportunity to cut corners on equipment capacity and other elements of an installation, and if I'd done this I know I'd have had a good many jobs I didn't get. But I've always refused to do it so far, because I've figured it would hurt more than it would help, in the long run."

One of things Gus Mauller insists on is a complete load survey on every job. He says you can't accurately size a residential air conditioning system



# June in January . . .

without one. And he ought to know, for among the 122 jobs he's done have been systems in homes ranging from less than \$10,000 in value to those in the \$50,000-and-up class. Naturally, more frills were allowable on the higher priced home installations — but the basic installation was the same. It was adequate to take care of all the home's air conditioning requirements.

Lest you get the idea that all of the jobs Mauller has installed have been in the new homes field, let's get the record straight — it's quite the opposite. He specializes on systems in existing homes, which he believes is the largest potential market for residential year-around air conditioning, as well as the most fertile field for full profits to the average dealer of his size.

## **Changes Air Outlets In Home**

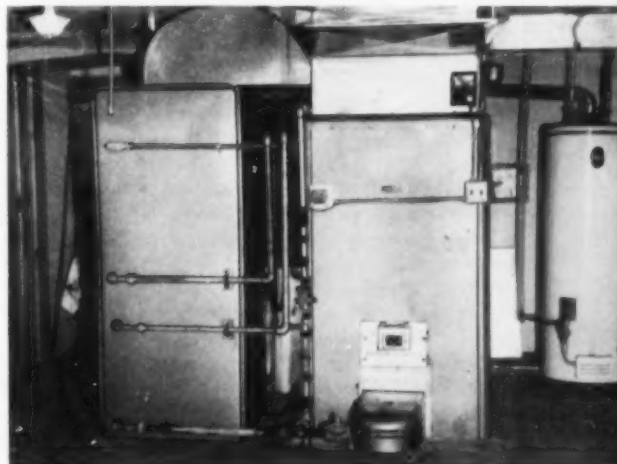
One of the principal changes required in converting a home to year-around air conditioning, Mauller says, is a change in the air distribution outlets. He finds the ones usually installed with the heating system don't do the job properly with chilled air, but with this change the existing air distribution system works satisfactorily. He reports no trouble so far on his jobs with ducting, etc.

Another Mauller "must" is no split systems on the jobs he does — either it's done his way, or not at all, he insists. It's still another facet of his policy that you have to handle the job right, with a complete system, if you're doing it.

Important in the larger installations, Mauller says, is to find out in advance the entertainment habits of the person who's buying air conditioning for his home. Then you fit the system to them. Mauller has found that almost invariably the entertainment ratio of the new air conditioning owner will rise — that in many cases this is one of the major reasons for buying air conditioning in the first place. So, he reasons, how can an adequate system be engineered without taking this fact into consideration?

Most customers, he says, willingly tell the salesman these things. Often when they are told what the cost

*Continued on page 120*



**ENTERTAINMENT HABITS** of home owners are important when selling to upper-income families. The home shown here is equipped with a 5-ton cooling system and gas furnace.

*How to sell..*

ALL YEAR

## Air Conditioning SERVICE

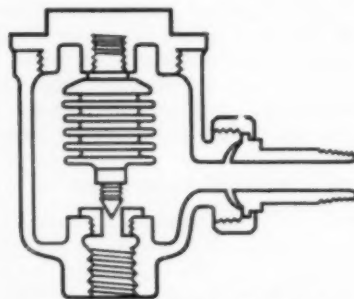
Complete air conditioning service includes heating. You can render this service, and the best time to sell it is when it's needs are fresh in the user's mind.

**by Edward F. Dowis**

**M**OST users of air conditioning will welcome a responsible contractor who can provide the necessary service to all equipment connected with the heating, cooling, cleaning, humidity control and circulation of air.

The services of a refrigeration contractor are necessary for the installation and maintenance of the cooling equipment. He alone possesses the training, experience and general know-how for this type of work. Because he is so familiar with the cooling and dehumidifying phase of air conditioning, he may feel that his responsibility ends with the proper selection, installation and care of refrigeration equipment.

Unified responsibility for heating as well as cooling, however, can be one of the best aids in selling air



**Fig. 1—Thermostatic trap.**

conditioning equipment and service. Whether he performs all of the work with his own crew or sub-contracts part of it, the contractor who will assume responsibility for the entire system is in a better position to serve the purchaser or user than one who is interested in only part of the installation.

Buyers like to procure their products and services from suppliers with whom they are familiar. It is obvious, from the customer's point of view, that it is better to procure air conditioning service and equipment from a contractor who is familiar with all air conditioning services than to shop for heating service one place, cooling at another and so on for humidifiers, fans, cleaners, etc.

The contractor who services cooling equipment will be familiar with the fan and duct system and should check filters and air cleaning equipment regularly, not

only for effectiveness but for pressure drop. When filters are allowed to become dirty, more pressure is required to force air through them or the volume of air is reduced. The coils may become colder than desirable or may frost because of the reduced load, and the sensible percentage is reduced.

Because some heating equipment is an integral part of the year-round air conditioner, the enterprising contractor will suggest a maintenance program which will be profitable to him and economical to the user.

Following is a check list of services which should be offered to users of steam heating equipment. These services should be performed each season. This list does not include services to boilers and pumps.

1. Test all thermostatic traps and replace defective bellows and seats.
2. Test all air vents and replace defective ones.
3. Test radiator and coil valves, eliminating leaks at stems.

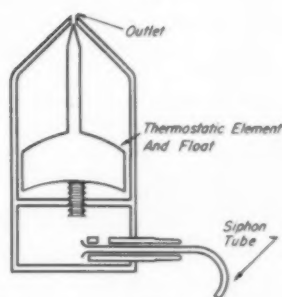


Fig. 2 — Air vent valve.

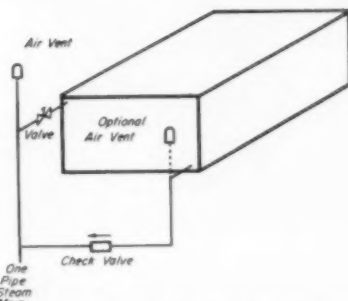


Fig. 3 — Conditioning coil connections.

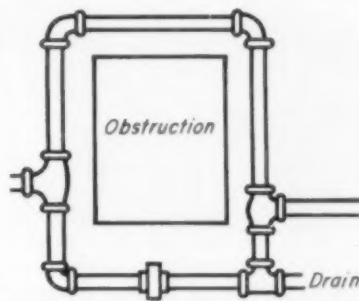


Fig. 4 — Steam line loop.

4. Examine piping supports to see that all lines are pitched for proper drainage.

5. Open and check bucket and float traps for cleanliness and wear.

6. Check and make necessary repairs to heat insulation.

**Testing Thermostatic Traps:** Traps are placed at the outlets of radiators, coils and other steam heated equipment to keep steam in the heater until it condenses, and to drain the condensate to the return lines and prevent steam blowing through. A typical thermostatic trap is illustrated in Fig. 1. It is usually connected to the heater by a union, of which the trap body is part, and to the return line by a pipe thread.

A bellows or diaphragm containing a volatile fluid operates the trap. When steam reaches the bellows, the fluid expands and immediately closes the trap. It re-

mains closed until the condensed water rises to the bellows and, being cooler than the steam, causes the bellows to collapse and open to drain the water out.

A trap which will not open will immediately be evident, because as water fills the heater the steam can not enter and there will be no heating. One which will not close will not be so evident, but will waste steam and prevent the proper difference of pressure between steam and return lines and result in generally unsatisfactory performance. A yearly test of all steam traps will almost certainly result in substantial fuel economy and better temperature control.

Service to the trap consists in removing the cap, which is usually threaded. A bellows which has lost its charge will be flexible and easily flexed by hand whereas a good one will be firm. The valve and seat can be examined for wear.

The bellows can be better tested by putting in a body and connecting to a source of live steam, which

may be from a small boiler. The steam connection should be to the union, through a valve. Pressure in excess of that for which the trap was designed, should not be applied.

Replacement bellows and other parts can be obtained from the manufacturer. Other dealers and manufacturers supply replacement parts for the more popular makes and sizes. Traps which can not be properly reconditioned should be replaced.

**Air Vents:** In order to remove air when the system is starting up after each shut down, it is necessary that vents be provided to pass air but hold steam or water. Such a vent is shown in Fig. 2.

The vent exhausts to the space where it is located, so it is important that it remove the air and not permit water or steam to leak to rugs and furnishings. It must

*Continued on page 86*



**SALES TOOL FOR DEALERS** is this mobile display unit for air conditioning equipment. It takes the merchandise — and the dealer — right to the prospect's door.

## Selling on Wheels

**A** ROLLING billboard and display room for the promotion of all types of air conditioning and heating equipment is the latest sales tool put into use by Max Wright, Inc. of Atlanta, Ga.

This converted 40-passenger highway bus makes it possible for the distributor to take his merchandising message right to his dealers, wherever they may be. And the dealer, in turn, can use the unit for making on-the-spot sales pitches to his prospects.

One of Wright's field representatives is in charge of the mobile display unit, and it is his responsibility to use it as effectively as possible in showing dealers how to display and sell air conditioning equipment.

The bus travels on schedule to accommodate dealers, who can request its use for any particular time. If the dealer desires, he himself can occupy one of the front seats and direct the driver over any route he wishes to travel in order to get the air conditioning and heating story across to as many of his prospects as possible.

When Wright acquired this bus he first removed all of the passenger seats and baggage racks, replacing them with both permanent and removable counters and shelving on which various models of equipment can be displayed and demonstrated.

In the former baggage compartment at the rear of the bus, a 4500-watt, 2-cylinder gasoline-powered electric generator was installed to provide power both for lighting and for operation of the equipment.

Also installed in this baggage compartment was one of Wright's own 2500 cfm evaporative coolers which delivers air through metal ducts to four-way air grilles for even distribution of cooled filtered air to all parts of the bus. The air is exhausted out the front doors and windows, at the rate of one complete air change every two minutes.

About midway in the interior of the bus is a double-seated booth with a table between. Directly above the booth is a rack designed to hold all sizes and shapes of sales literature, price lists, and order pads. Here dealers and salesmen can sit down with their customers to iron out details of any orders written.

In the rear half of the bus, all counters and shelves are removable, so that any tall piece of equipment can be floor mounted. A total of 12 convenience outlets line both sides of the bus, so that all displays can be made operative.

Beneath the instrument panel of the bus is a tape recorder system with amplifiers for both interior and exterior use. Voice broadcasts can be made over these amplifiers either directly or through the medium of the tape recorder.

Fluorescent lighting provides soft, even illumination throughout the entire interior.

also vent air from the radiator promptly to provide heat and save fuel.

The air venting valve consists of a float or thermostatic element and usually both. It is open until either water raises the float or steam causes the thermostatic element to expand, closing the small opening to the atmosphere. A siphon device is usually provided to assist draining water from the valve back to the system. Valves which are to be connected to radiators and coils usually have a  $\frac{1}{8}$ " male pipe thread and service consists in removing the old vent and installing the new one when the pressure is off.

Air vents are relatively inexpensive and not readily serviceable. Replacement is indicated when one fails and the user should be provided with a supply, which he can readily install himself. Here is a good over the counter sales item which will bring customers who may have other air conditioning needs. Select a valve from a dependable maker and it will be sure to give satisfaction. Because of the standard size, it is a simple item to stock.

Some manufacturers specify the maximum "drop away" pressure of their valves. This is the maximum pressure at which the valve will open or close. It can be operated at a higher pressure if, between firings, the pressure falls to the designated pressure.

For venting main steam lines and risers, larger air vents are used, with pipe threads of  $\frac{1}{2}$ " or  $\frac{3}{4}$ ". The construction is similar to the smaller  $\frac{1}{8}$ " valve, though they are obtainable for higher pressures. When supplying vents for plants which operate on a vacuum part of the time, a valve adaptable to this kind of system should be used to prevent air entering during the time the pressure is sub-atmospheric.

**Radiator Valves:** Steam valves may be either manual or automatic. The usual service consists in seeing that the disc and seat are not worn and that the valve does not leak at the stem.

Manually operated valves have a conventional packing gland or

*Continued on page 106*





**"We have 1955's BIG opportunity  
for you, Mr. Dealer!"**

"Airtemp has just completed its 20th year of progress in air conditioning. And now, entering 1955, the opportunity for air conditioning dealers to progress with us is greater than ever before, because:

Most people know the Airtemp name, associate it with engineering leadership, have confidence in the products which carry it. (Airtemp is the name that will make your selling job easier in 1955!)

Our Packaged Air Conditioners are the best value in the industry. This is due to better tooling and improved manufacturing methods, yet quality is to the same standards as before. This is proved by our recent reduction in the cost of the five-year warranty charge, which includes freight and labor.

We make waterless air cooled air conditioners in 2, 3, 5, and 7½ h.p. sizes. They have been proved in many

thousands of installations. The Airtemp compressor has demonstrated its ability to stand up under high head pressures. So, with Airtemp, you can sell anywhere; no need to worry about condensing water.

Sound like your *BIG* opportunity for bigger profits in 1955? Then drop me a line today! I will personally see that you get all of the facts and figures—*fast!*"

J. F. KNOFF  
VICE PRESIDENT IN CHARGE OF SALES

**AIRTEMP**

DIVISION OF CHRYSLER, DAYTON 1 OHIO

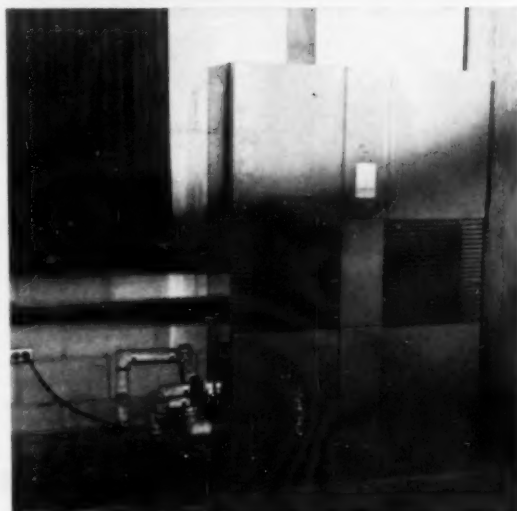


One job led to another in this fast-growing industrial plant, proving once again that it pays to handle even the smallest jobs well.

**A**BOUT a dozen years ago, Woody Wilson's \$70,000 phone call came in. Of course, it didn't look like \$70,000 at the time. Just routine. A man by the name of Blaisdell up the street had a shop where he made cigarette lighters and was having trouble with a self-contained air conditioning unit he had bought a while back. Anyway, Wilson took a run over and discovered what was wrong. Everything was. Wilson, a good refrigeration man, could see the trouble was not the unit itself but the way it was hooked up.

Blaisdell said the unit had been put in by a local plumber. Also that he'd like to get the thing out of there, or words to that effect. Wilson told him that wouldn't be necessary, that he'd have it fixed up in no time — so it wouldn't give any more trouble. All this happened about the time Woody's son, Don, went into the Navy, and Wilson Refrigeration Co. became a Carrier dealer in Bradford, Pa. Blaisdell's lighters were just beginning to catch the public fancy, too. He called them "Zippo" because he liked the word "zipper" and figured Zippo was as close as he could get to it.

Today Zippos are probably the largest selling lighters in the world. George Blaisdell has enlarged his original small plant many times. And Woody Wilson, who has been in on all of the expansions, figures the original service call he got from Zippo a decade ago has added up to \$70,000 worth of business.



**PACKAGED UNITS** like these are used throughout the Zippo lighter plant to provide employee comfort as well as production efficiency. Top photo shows the installation in one of the storage areas, while the bottom picture illustrates the type of units used in office and manufacturing space. Short runs of duct were used.

Today, Zippo's offices and production areas are air conditioned throughout by 18 units of 5 and  $7\frac{1}{2}$  hp for a total of 100 tons. The old 5-ton unit is still humming along, too, incidentally. Blaisdell says the package units give him flexibility and reliability like no other system he can think of. Don Wilson said they never sold more than six units to the company at any one time and usually it was just one unit at a time.

Along about the time Zippo called in Wilson Refrigeration, Blaisdell was beginning to expand. As Blaisdell himself recalls it, this was a rather haphazard procedure. What was office space one day became factory space the next and shipping space the day after that. A crew of carpenters is still kept on

hand at Zippo as a sort of "emergency squad" to knock down or set up plywood partitions as requirements dictate.

Under these circumstances, Blaisdell wanted air conditioning that would provide the utmost flexibility. "It seemed to us," he says, "that the simplicity of relocating a packaged unit with its short ductwork, and then adding new units as they were needed, was the kind of air conditioning our kind of operation needed. We didn't want any other kind." Blaisdell had another reason, too. He liked the idea of being able to shut down one unit, if necessary, without cutting off the rest of the plant.

Zippo officials allow smoking throughout the plant and for that reason if for no other they can't afford air conditioning shutdowns. In present cramped quarters, the place would have an atmosphere like Stillman's gym on Saturday night. As it is, the units are set to bring in 30% outside air to maintain freshness and visibility.

At this writing, Zippo is planning a \$600,000 expansion that will double the present 65,000 sq.ft. of space. There will be a new three-story office building adjoining the downtown plant and a new 35,000 sq.ft. plating plant on the southern edge of town. No need for a flying squad of carpenters in these buildings. They will have fixed partitions and will provide all the space needed for permanent departments. It might

seem that they would install a central system — but they are not. The new addition is using twelve  $7\frac{1}{2}$  hp units and one 5 hp unit (95 hp). When Don Wilson was discussing the job with Blaisdell he pointed out that an applied system could be located in the basement, out of sight. "So what?" Blaisdell snapped, waving an arm toward a unit. "Look at it — it's beautiful. You can put one of them right in the middle of my office anytime you want to."

Actually, they aren't doing that. In fact, for the first time they are hooking up the units with a cooling tower (there are to be three towers with a capacity of 280 gpm). The units for the executive offices will be located on the second floor with duct work up through the floor with a volume damper and steam coil

*Continued on page 120*

**PRODUCTION OPERATIONS** in the Zippo plant made air conditioning almost a "must". In the photo at right, women in the assembly room insert wicks and cotton into the lighter shells. Humidity control is important here to keep these porous materials from absorbing too much moisture. In the picture below, component parts are being assembled into finished lighters. This room contains about 100 girls working elbow to elbow, and smoking is permitted, emphasizing the need for conditioning.



# THE COMMERCIAL REFRIGERATION and AIR CONDITIONING

## APPLICATIONS MANUAL

by Arthur H. Farr

Readers are invited to submit their problems to this department. Each letter of inquiry will be answered personally by the author. All problems should be clearly and completely stated and addressed to: COMMERCIAL REFRIGERATION AND AIR CONDITIONING, Manual Dept., 1240 Ontario St., Cleveland 13, Ohio.

### How to Improve Control of Duct Heaters By Modulating Gas Supply to Burners

THE increased application of gas-fired duct heaters — used in combination with packaged air conditioners and simple duct systems — has brought to light many interesting control modifications.

While the above stated combination of a duct heater and a packaged unit into a year-around system of heating and cooling generally results in a low cost job, the comfort results produced by the system can be made to approach those of more expensive types of systems. One of the modifications used to improve the control of a duct heater is to add modulation control to the gas supply. Almost all available duct furnaces are designed to operate on a straight "on-off" type control with either constant fan or intermittent fan operation.

However, by modulating the gas supply to the burners and maintaining constant fan operation it is possible to operate within the "winter comfort zone" and eliminate objectionable drafts.

The following simple wiring diagram will explain this modification of standard heating controls.

As shown in the attached diagram, the modulating gas valve controls the flow of gas to the burners. The valve motor is positioned by a proportioning room thermostat, and an end switch attached to the valve motor operates the gas solenoid valve to give posi-

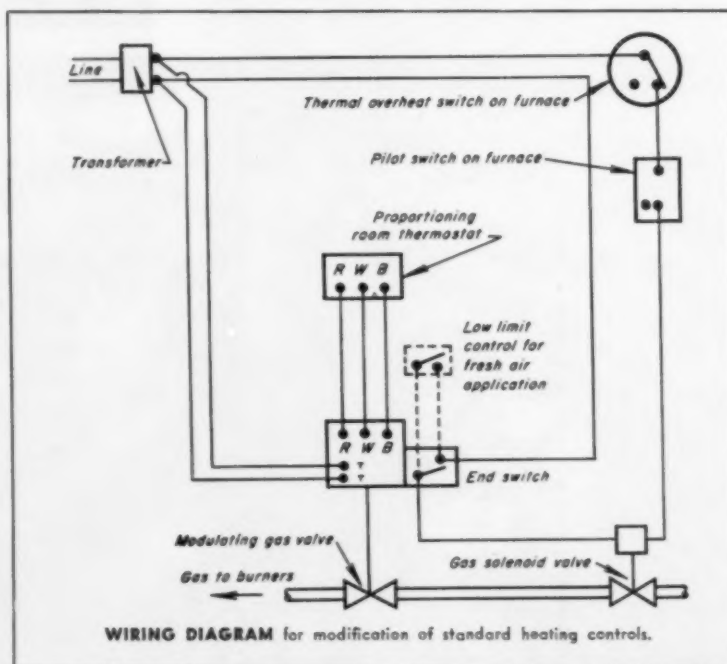
tive gas shut-off. Most burners will not operate at below 25% full gas flow; therefore it will be necessary to adjust the valve linkage so that in the "closed" position the valve will pass 25% of rated input to the burners.

If fresh air is to be admitted during the winter heating cycle, a temperature controller (indicated by dotted lines on sketch) should be added to the system as a low-

limit control. With the bulb of the control located in the duct downstream from the heater, this control will jump out the end switch and cause the gas solenoid valve to open. Since the modulating valve will permit 25% gas flow in the closed position, the fresh air will always be preheated to prevent blowing cold air when the room thermostat is satisfied.

The contractor utilizing this control scheme should be aware of its drawbacks as well as its advantages. Since the modulating valve has a stuffing box to seal the actuating shaft, it is possible to develop a gas leak at this point. Consequently, good maintenance is a "must" when installing this valve in a gas line. During the intermediate seasons when only a small amount of heat is required, the effects of modulation will not be felt, as the minimum setting of the valve will undoubtedly produce sufficient heat. Therefore, during mild seasons the system will operate on an "on-off" basis, with a 25% flame.

However, since modulation is most desired in extremely cold weather, this system will produce quite satisfactory results — and at a much lower price — than combinations of a packaged unit and either a hot water or steam boiler.







## "It sure gets rid of the gook!"

It in this case is "Virginia's" new degreasing solvent sold under the trade name of Virginia No. 10. Made expressly for refrigeration, electrical and automotive use, No. 10 fills the need for an effective degreaser that can be used in safety.

Whatever you expect a degreaser to do, Virginia No. 10 does it—like a charm. Removes oil, grease and grease-bound dirt in a flash. Dries quickly, is noncorrosive and, unlike some solvents, will not rust machined parts.

But Virginia No. 10 is much more than a good degreaser. It has a dielectric strength of 20,000 volts. The significance of this is it will not attack electrical insulation or leave any current-carrying residues. Its flammability hazard is very low. And you can stand a concentration of 200 parts per million for hours without harm—it's about 8 times less toxic than carbon "tet."

Virginia No. 10 is available in 1 gallon factory-filled cans from your favorite wholesaler. Or write Circle No. 60 on Reader Service Card

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World's Largest Manufacturer  
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that **RETAILS FOR LESS** than  
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TYPE OF FIRM	Name _____
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____ Wholesaler	City and State _____
____ Dealer	
____ Mfr. Rep.	

Circle No. 61 on Reader Service Card

## USEFUL LITERATURE On Air Conditioning

To obtain the information described below, simply circle on the postcard in this issue the key numbers of the items you wish to receive. We will forward your requests to the companies concerned.

**A COMPLETELY REVISED** 32-page air conditioning catalog has been released by Young Radiator Co. that thoroughly covers fan performance data, heating and cooling coil performance, filter data, data on mixing boxes and physical dimensional data. Other helpful features include typical selection examples which make easy the selection and specification of Young air conditioning units.

Circle No. 91 on Reader Service Card

**TYPICAL ANNUAL WATER SAVINGS** which can be achieved through use of Flow-Cold cooling towers is given in this 8-page catalog. New and simplified selection procedure employing accurate, easy-reading curves to specify all principal factors is given along with a typical selection example. The publication is available from Acme Industries, Inc.

Circle No. 92 on Reader Service Card

**A NEW GRILLE** especially designed for school gymnasium applications is thoroughly described in a 4-page booklet by Titus Mfg. Corp. The 2-color booklet tells how the new built-in durability literally stops damage and replacement costs. Pictures, sketches and charts give all the information about the grille's use and cost.

Circle No. 93 on Reader Service Card

**COMPLETE DESCRIPTION** of four types of year-around air conditioning units is given in this 4-page, 3-color bulletin published by Modine Mfg. Co. Illustrated portions of the bulletin show uses of the units in office buildings, hotels and motels, hospitals and home and apartment buildings.

Circle No. 94 on Reader Service Card

**TYPICAL INSTALLATIONS** of "Kathabar" equipment for the brewery industry are described in a 4-page 2-color bulletin (No. K-554) available from Surface Combustion Corp. Delivery of pure air at precise temperature and low relative humidity improves bacteriological control, maintains space normally dry.

Circle No. 95 on Reader Service Card

**TECHNICAL DATA** for anyone who specifies wrought iron piping in heating and plumbing services, air conditioning lines, or water supply systems is contained in a one page digest published by A. M. Byers Co.

Circle No. 96 on Reader Service Card

**HOW TO KEEP EQUIPMENT RUNNING** at top operating efficiency is the heart of the 28-page manual that is being released by Copeland Refrigeration Corp. This service manual is divided into two main sections covering (1) electrical and (2) mechanical service data. The booklet is replete with charts, graphs, and diagrams explaining how to keep the equipment in good shape. There are over 40 illustrations in the booklet.

Circle No. 101 on Reader Service Card

**LOW PRESSURE REFRIGERATION UNITS** is the title of this 12-page 3-color brochure (Bulletin No. 97-E) which offers a detailed explanation of refrigeration and air conditioning installations. Profusely illustrated with photographs, sketches, and cut-aways showing advantages and cost saving features. This publication is available from the Frick Co.

Circle No. 97 on Reader Service Card

**NYLON INSULATION HANGERS** and hanger supports, together with the special quick-drying adhesive to hold them in place, are the subject of a 4-page bulletin issued by Goodloe E. Moore, Inc. Step-by-step instructions for use are illustrated.

Circle No. 98 on Reader Service Card

**REDESIGNED AND REENGINEERED** evaporative condensers of the Perma-Fan line are the subject of a new 6-page brochure available from Drayer-Hanson, Inc. Complete selection tables and dimensional data are provided, various coil and motor connections are diagrammed, and a cut-away illustration points up construction features.

Circle No. 99 on Reader Service Card

**CONDENSED SPECIFICATIONS** of 2 and 3-hp standard year-round residential air conditioning units are featured in the 4-page folder issued by Shana Mfg. Co. Descriptive information tells how these units can be added to existing home heating systems to provide year-round comfort.

Circle No. 100 on Reader Service Card

(Turn to page 109 for more Useful Literature)

## NEED

heavy duty, large capacity water level controls? Maid-O'-Mist's No. 6900 series float control diaphragm valves are especially designed for air conditioning equipment, evaporative coolers, air washers, etc., and will accurately control water at any level. Water can be discharged upward or downward as specified.

## WATER LINE FLOAT CONTROL VALVES



- ✓ **CAPACITIES:**  
1½ gals. to  
6 gals. per minute
- ✓ **CAST BRASS BODY**
- ✓ **COPPER FLOAT**
- ✓ **NEOPRENE DIAPHRAGM**
- ✓ **INLET AND OUTLET  
TAPPING**  
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**BRASS  
MOUNTING PLATE**

Available for special  
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See your jobber or write

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"They're headed for

**Hallmark!**"



SCALE MODEL



**48**

**drayer-hanson**

Air Conditioning  
Units

**N**ew, exclusive engineering developments are landing us big prestige jobs, such as this functionally superior home office for Hallmark Cards now under construction in Kansas City, Missouri.

These Drayer-Hanson HH Series year-round air conditioning units—so often architect specified—give you:

**Rugged construction!** Frame electrically welded  
**Superior performance!** Ample prime and secondary coil surface

**Longer Life!** Vinyl-coated glass fiber insulation

... but there is more to it than that!

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\*Architect: Walton Becket and Associates, Los Angeles.  
Air Conditioning Contractor: Interstate Heating and Plumbing, Kansas City.



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"See you at the Philadelphia Show, Booth 214!"

Circle No. 62 on Reader Service Card

# WHAT'S NEW

## in Air Conditioning Equipment

For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your request will be forwarded directly to the companies concerned.

(For more New Products turn to page 112)

### Residential Unit

**Product:** Self-contained, air-cooled, 1½-ton conditioning unit especially designed for the smaller, less expensive homes.

**Manufacturer:** Shana Mfg., Inc., Chicago, Ill.

**Features:** Will deliver 16,500 Btu at ASRE conditions. Has outlets for four round supply ducts.



Complete weatherproof cabinet for outdoor installation. May also be installed in connection with a furnace, or placed in attic, on roof, or in utility room. Operates at 125 F ambient temperature. Shipped complete with evaporator blower and condenser blower for simplified installation.

Circle No. 131 on Reader Service Card

### Plenum Humidifier

**Product:** New plenum humidifier for warm air furnaces.

**Manufacturer:** Daffin Mfg. Co., Lancaster, Pa.

**Features:** The new "550" unit is quieter, smoother in operation due to new type resilient mountings. Other features include easier filter replacement; increased output (now ½-gallon per hour); an improved method of water return; and a new green finish on a solid brass case. Water vapor from a centrifugal atomizing device is injected directly into the furnace air stream for positive discharge. The unit becomes fully automatic through a humidistat control. Installation is said

to save as much as 10% on annual home heating bills, since tempera-



ture can be lowered and comfort still maintained at a normal level.

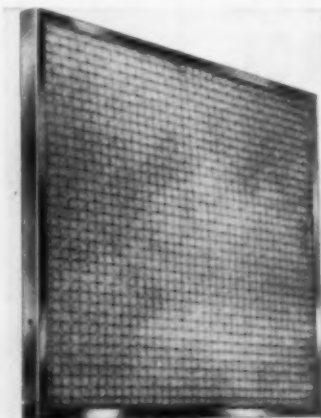
Circle No. 132 on Reader Service Card

### Air Filter

**Product:** Type DY "Dycon" dry air filter.

**Manufacturer:** Continental Air Filters, Inc., Louisville, Ky.

**Features:** A synthetic fiber blanket which catches and retains



dust by an accumulated static charge is the filter media used. Designed for use in domestic and commercial air handling equipment, Type DY is a large capacity

high velocity filter which can be easily rinsed under a coldwater faucet or nozzle-less hose and returned to service immediately as effective as when new.

Circle No. 133 on Reader Service Card

### Residential Units

**Product:** A new residential heating and cooling unit, and a new "Kooler-aire" air-cooled condensing unit.

**Manufacturer:** United States Air Conditioning Corp., Minneapolis, Minn.

**Features:** The combination summer-winter conditioner uses a single duct system to distribute



Air-Cooled Condensing Unit



Year-Round Residential Unit

both warm and cool air throughout the house. The conditioner comprises a gas-fired heating unit and a matching summer air conditioning unit. Available in four models, combining warm air furnaces of 100,000 to 150,000 Btu capacity with 2 or 3-ton cooling units. The heating section, as well as the cooling unit, will be completely manufactured by Usairco. Desired temperature is maintained automatically by a heating-cooling



# Thatcher...THE OLDEST NAME IN HEATING...

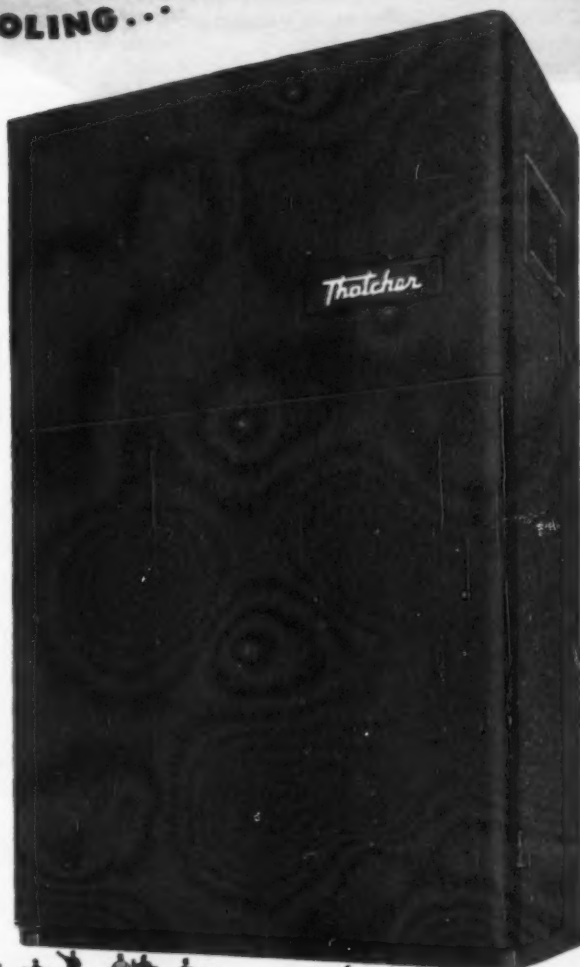
**PRESENTS THE VERY NEWEST  
IN SUMMER COOLING...**

**Your biggest opportunity to get  
your FULL SHARE of the  
tremendous builder and  
modernization markets**

It's big news for *every* dealer—this new Thatcher Air Conditioner. Here's a real opportunity to cash in on the big-volume, high-profit, summer cooling market!

Builders are enthusiastic because air conditioning sells houses . . . and with Thatcher they know they can deliver the finest! Homeowners are enthusiastic because a Thatcher gives dependable, cool air enjoyment . . . adds extra dollar value to their homes. And we're enthusiastic because *now* you can make more money with the Thatcher "two season" line by selling efficient and dependable "indoor comfort" equipment . . . year round.

Don't miss the opportunity to cash in on the lusty building and modernization market. Get all the facts about this big profit maker. Write today for full details!



Available in 2, 3, 5, 7½, and 10 ton models for both store and home installations. Same eye pleasing maroon and gray finish as the famous Thatcher heating line.



# Thatcher

## FURNACE COMPANY

G A R W O O D , N E W J E R S E Y

**AIR CONDITIONERS • FURNACES • GAS BURNERS • OIL BURNERS • BOILERS**

**See this unit on display at the International Heating and Ventilating  
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**and AIR CONDITIONING • JANUARY, 1955**

thermostat. For summer operation, a by-pass damper prevents the continuous flow of cool air over the heat exchanger to eliminate condensation and rust formation in the furnace. Permanent filters are removable for cleaning. The Kooler-aire air-cooled condensing unit is utilized with various accessories to provide cooling alone or to convert an existing warm air heating system to all-year air conditioning. Especially applicable in areas where water supply or

disposal is a problem. Available in two models with nominal cooling capacities of 2 and 3 tons.

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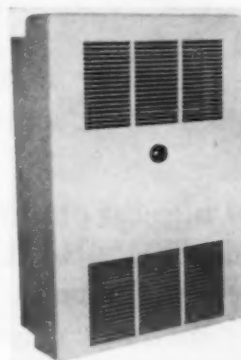
#### Wet Heat Unit

**Product:** "Dual-Vector" hot and chilled water heating and cooling conditioning system.

**Manufacturer:** Union Asbestos & Rubber Co., Chicago, Ill.

**Features:** In homes, apartments, hotels and motels, the new

unit provides a completely flexible system of balanced air conditioning for any size room. Forced hot water circulated through the unit furnishes heat and chilled water gives the cooling in summer. A unit fan control gives individual



room temperatures and humidity capacities. The conditioners are used in series and designed for use with one or two-pipe systems. Can be easily and quickly installed between studding.

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## Your No.1 DEMAND...

## the CONDENSER must be

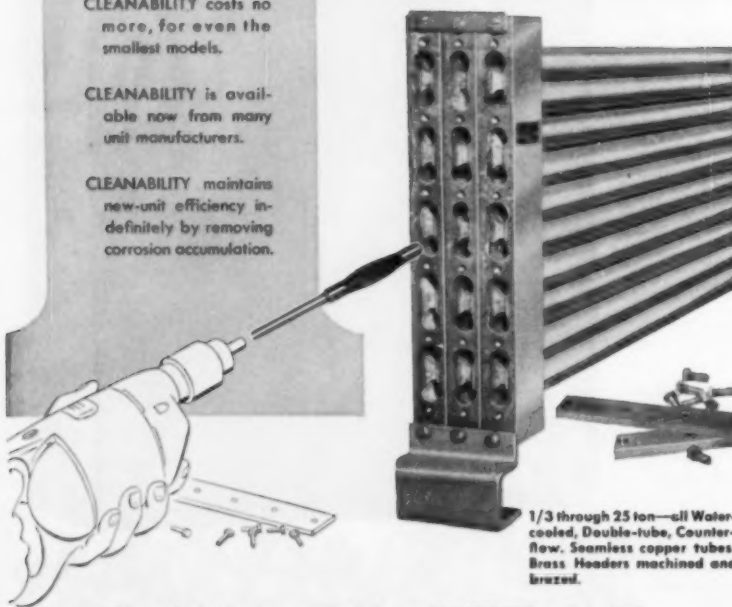
# CLEANABLE

*Because...*

CLEANABILITY costs no more, for even the smallest models.

CLEANABILITY is available now from many unit manufacturers.

CLEANABILITY maintains new-unit efficiency indefinitely by removing corrosion accumulation.



Why not insist that your next unit have a CLEANABLE water-cooled condenser? Especially since leading manufacturers, one after the other, are recognizing the "must" advantages of accessibility to cleaning and are equipping their units accordingly. Initial purchase cost is no higher, and longer life and more economical performance are guaranteed. The CLEANABLE feature enables you to recover new-unit efficiency and thus maintain 100% economical operation indefinitely. Water-tubes are accessible from both ends on all size models.

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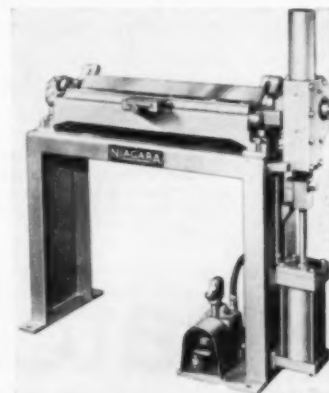
Circle No. 64 on Reader Service Card

#### Bar Folder

**Product:** Air actuated bar folder.

**Manufacturer:** Niagara Machine and Tool Works, Buffalo, N.Y.

**Features:** This new line of bar folders is used for bending or folding sheet metal to an angle or lock in shops, where air is available at pressures from 70 to 80 psi. This folder increases production while



reducing operator fatigue. Initial movement of the piston automatically clamps the work in place while the folding blade rotates. A foot pedal starts the movement and

# Let's get the facts straight about driers



IT SEEMS that the time has come to get a few facts straight about refrigeration driers . . . about what they will and won't do . . . and the validity of some of the claims made for different types. What is happening in the drier field has happened, and will continue to happen, to every group of products manufactured by American Industry . . . and the malady is best described as "exaggerated claimitis." Periodically it creeps into everything from motor oil to television and we're sure you've been well bombarded by the "loud claimers" at one time or another. You know the kind of stuff we mean . . . "use super pills and you won't have to change oil in your car for 50,000 miles" . . . "cures everything with just one bottle" . . . "does a bigger, better, faster, cheaper job than any other tool on the market." When basic facts are distorted to make a plausible story, "exaggerated claimitis" has set in.

Now let's talk about driers. A drier, dehydrator or call it what name you will, is hardly as mysterious in operation as a nuclear reactor. It's a simple, highly important device that is essential to the proper operation of any refrigeration system. Its job is to take out the undesirable elements in refrigerants. The Mueller Brass Co. has been making driers for over 35 years and naturally we feel that we know a little bit about them. With over 3,000,000 of them in service, we feel that our driers must be fairly good from all viewpoints.

When we say that a drier is rated at 5 h.p. we mean just that . . . not  $4\frac{3}{4}$ . When we say our driers are skillfully engineered and carefully produced we mean it. We want you, as our customers, to believe what we have to say . . . which now brings us around to the word "acid" which seems to be a brand new discovery to everybody in the business.

Moisture is the biggest enemy of successful refrigeration performance . . . with sludge next in line. Acid, which can form only under certain set circumstances, is a comparatively minor problem. But, since there seems to be a real

scare campaign on the evils of acid, let's delve a little further into the subject. We've been well aware of the fact (for the past 35 years, anyway) that hydrochloric acid can sometimes form through the hydrolysis of Freon and, naturally, it should be removed from the refrigerant. Removal of such acid is merely a matter of course, not an all-out battle such as some manufacturers seem to think is necessary. For acid removal, the PA 400 Super Silica Gel used in Mueller Brass Co. driers is 100% efficient . . . which makes it a little hard to beat. Couple this with the fact that the PA 400 provides 98% more drying capacity and it would seem that both the moisture and acids have been well handled. When it comes to the second "ugly" word . . . "sludge," we feel that the cone-screen filter-strainer does a pretty fair job because its filter area has not only been increased by 30% (and it was big before!) but also gives 7 times the cleaning capacity of the filter or strainer device used in ordinary driers.

Now let's look into drier designs for a moment. Basically a drier is a cylinder containing a desiccant, and has varying methods of filtering and straining the refrigerant which flows in one end and out the other. Straight-through flow naturally presents less restriction in the line . . . you can put all sorts of angles and bends in a drier but you aren't helping the cause one bit. The drier is to help not hinder . . . and a straight line is the shortest and least restricted distance from the inlet end to the outlet.

We have touched on many things in this discussion of driers, but, as we said before, there's nothing so mysterious about the operation of a drier that warrants raising a lot of fuss and feathers about that bogey-man, "acid." It is purely a severe case of "exaggerated claimitis" because acid never was allowed to become important when Mueller Brass Co. driers were on the job.

We hope we've gotten a few facts straightened out, and thanks for your reading attention . . .

The Mueller Brass Co.

138

## MUELLER BRASS CO.

PORT HURON 10, MICHIGAN

a release of the pedal reverses the action. An adjustable stop limits the bend, and width of the fold is controlled by a regulated gage. Available in four sizes to handle working lengths from 21 to 42" and thickness of 20-gage mild steel and lighter.

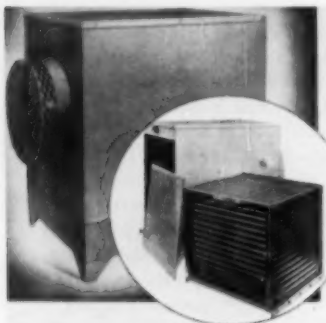
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### Cooling Tower

**Product:** New design cooling tower.

**Manufacturer:** Silvercraft, Inc., Louisville, Ky.

**Features:** Distinguished by all aluminum and stainless steel construction, these units can provide



2, 3, 4, 5 and 7½-ton capacities by interchange of fan blades only. The entire all aluminum wet-deck cartridge slides out smoothly on stainless steel rails for cleaning or replacement. Convenient electrical and plumbing connections make installation fast and easy.

Circle No. 137 on Reader Service Card

### Double-Flow Tower

**Product:** Double-flow cooling tower.

**Manufacturer:** Marley Co., Kansas City, Mo.

**Features:** This packaged steel tower is designed to cool loads in



the 60 to 100-ton range. Besides air conditioning and refrigeration

the unit is suitable for industrial water cooling. Equipped with multi-blade, cast aluminum, adjustable pitch fans with V-belt drive. Casing and basins are fabricated from heavy gage steel. Interior surfaces are completely protected with corrosion-resistant mastic. Exterior is painted with zinc chromate primer and a heavy coat of aluminum paint. Shipped in three sub-assemblies for easy handling and rapid erection.

Circle No. 138 on Reader Service Card

### Store Conditioner

**Product:** A complete line of package commercial air conditioners that require no water.

**Manufacturer:** Carrier Corp., Syracuse, N. Y.

**Features:** Designed for stores, suites of offices and other large



spaces where water may be limited or where there may be piping difficulties, these new "Weather-maker" models employ air-cooled refrigeration. They are being made in four sizes from 2 to 7½-hp. The air-cooled condenser can be installed on a roof or setback or even inside the building, with ducts to supply outside air. Ductwork can lead from either top or side of the conditioner cabinet to discharge grilles. Heating coil can be installed if needed. Conditioner can be located off floor if desired.

Circle No. 139 on Reader Service Card

### Trailer Conditioner

**Product:** Air conditioner for trailer homes.

**Manufacturer:** Carrier Corp., Syracuse, N. Y.

**Features:** The unit fits entirely inside and requires no openings in



the walls or roof. It serves as an end table, as well as an air conditioner. A compact ¾-hp floor-type conditioner that will fit in either bed or living rooms. Operates on the 115-volt circuits found in most trailer parks.

Circle No. 140 on Reader Service Card

### All-Metal Towers

**Product:** All-metal "Flow-Cold" cooling towers.

**Manufacturer:** Acme Industries, Inc., Jackson, Mich.

**Features:** The new 2, 10 and 15-ton models feature all metal construction. As with the intermediate models, blowers are employed in the new towers to achieve quiet, efficient operation

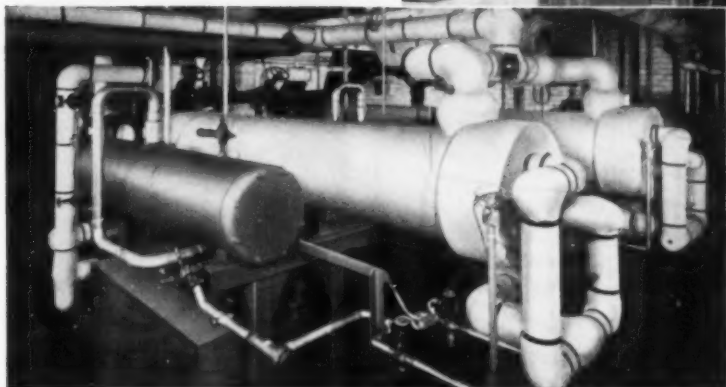


with or without ductwork. The units can be installed indoors or outdoors. Heavy galvanized finish makes them rust-proof and corrosion resistant and eliminates the need for painting or other surface maintenance. Some of the features are flush-type, anti-splash



# p-k Freon Coolers

**HOLD POSITIONS  
OF TRUST  
AT 12½%**



National State Bank Building in Newark, New Jersey. **p-k** Freon 22 Coolers were specified by Delta Engineering and Conditioning Co., Inc., East Orange, New Jersey. "We specify them because they are the best" says William Adelman of Delta.

The air conditioning system of the National State Bank Building, Newark, New Jersey, is regarded as a sound, long-term investment in business efficiency. Initially installed to air condition ten floors of which three are now in operation, the other seven floors may be added at the bank's option *without* changes or additions to the basic refrigeration cycle.

**p-k** Freon Coolers are an integral part of this system. Two of these coolers provide a total capacity of 125 tons of refrigeration cooling water at the rate of 300 gpm from 52°F to 42°F. Even at 12½% total

capacity, proper gas velocities are maintained for efficient operation.

Men who specify **p-k** coolers once are very likely to specify them again. **p-k** coolers were chosen for the National State Bank on the basis of previous experience. Efficient and economical, they now occupy positions of trust in countless commercial and industrial buildings.

**p-k** is a pioneer in the development of many types of heat exchange equipment. Whatever your heat exchange needs—heating or cooling—talk to **p-k** about them.

*Write for literature or engineering help. No obligation, of course.*



**the Patterson-Kelley Co., inc.**

310 Burson Street, East Stroudsburg, Penn.

101 Park Avenue, New York 17 • Railway Exchange Building, Chicago 4 • 1700 Walnut Street, Philadelphia 3 • 96-A Huntington Avenue, Boston 16 • and other principal cities.

Circle No. 66 on Reader Service Card

and AIR CONDITIONING • JANUARY, 1955

2002

air inlets; non-clogging, centrifugal-type spray nozzles; and an exclusive combination waste-drain and overflow that is fool-proof and simplifies servicing.

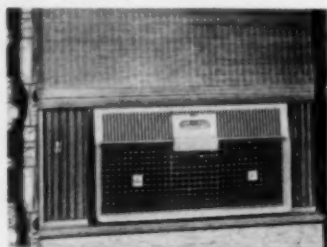
Circle No. 141 on Reader Service Card

### High-Capacity Cooler

**Product:** Room cooler that can be installed in five minutes and can cool a room in another five minutes.

**Manufacturer:** Mitchell Mfg. Co., Chicago, Ill.

**Features:** Called the super-high capacity chassis series, the



line consists of three models featuring a new refrigeration circuit in

which air is cooled and filtered twice. The new cooler maintains its peak efficiency to 120 F. outside temperature. It is available in 3/4, 1, and 1 1/2-hp models. All feature air flow modulation in the form of a regulating switch that enables the unit to deliver either a concentrated column of air for fast cooling or a gentle flow of cool air to maintain desired temperature.

Circle No. 142 on Reader Service Card



### A perfect team in my book— YORK Valves and Fittings and the YORK AUTHORIZED JOBBER!

I want satisfied customers -- and York Valves and Fittings really help me get them!

1. Every York Valve is triple inspected and double tested under water at 300 lbs. pressure.
2. I know of York Valves that have been in use for 50 years!
3. York makes the industry's most complete line

I want SERVICE when I need it!

1. York Valves and Fittings are immediately available from my York Authorized Jobber.
2. He knows his business, and I rely on him for a lot of helpful tips.
3. Take my advice and get in touch with YOUR York Authorized Jobber -- right away.
4. He's an expert!

**MR. WHOLESALE—INVESTIGATE THE  
ADVANTAGES OF THE YORK LINE!**

### IT ALWAYS PAYS TO USE YORK ACCESSORIES AND SUPPLIES

Air Filters • Automatic Controls • Charging Connections • Coils and Piping • Cold Storage Doors • Freon Refrigerants • Gas Masks • Hand Oil Pumps • Ice Cans • Motors and Pumps • Oil • Oil Traps • Purge Devices • Receivers • Renewal Parts • Suction Traps • System Cleaners • Valves and Fittings.



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YORK CORPORATION YORK, PENNSYLVANIA

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

Circle No. 67 on Reader Service Card

### On-Off Control

**Product:** On-off control with 7-day dial sectioned and marked for each day.

**Manufacturer:** Tork Clock Co., Inc., Mount Vernon, N. Y.

**Features:** The new control will permit the programming of operations without the need of manual



control to alter schedules as daily needs require. Dial is divided and marked into 2-hour periods, at even hours, with each section slotted to accept programming tabs. The switch is installed into the line controlling the electrical device and, unless altered, is always in the "off" position. Tabs are inserted into the slots for the hours that "on" operation is required. As the slow-moving dial rotates, the tabs reaching the "on" contact close the circuit.

Circle No. 143 on Reader Service Card

### Conditioner Cover

**Product:** Air conditioner cover.

**Manufacturer:** Ero Mfg. Co., Chicago, Ill.

**Features:** A sturdy convenient all-weather cover that will protect

# Whatever the application . . . YOU'LL FIND THE RIGHT ANSWER

FOR WINDOW AIR CONDITIONERS  
FOR REACH-IN REFRIGERATORS  
FOR MEAT DISPLAY CASES  
FOR ICE CREAM CABINETS  
FOR FROZEN FOOD DISPLAYS  
FOR VEGETABLE DISPLAY CASES  
FOR CANDY DISPLAY CASES  
FOR STORE COOLERS  
FOR MILK COOLERS  
FOR HOME FREEZERS

for finer performance  
in the all-inclusive,  
all-quality  
line of



**SUPERMETIC MODEL CM-32**  
1/2 H.P. Capillary Tube  
Electric Condensing Unit

## Servel SUPERMETIC

**STANDARD and CAPILLARY TUBE  
CONDENSING UNITS**

FOR COUNTER FREEZERS  
FOR SODA FOUNTAINS  
FOR WALK-IN COOLERS  
FOR WATER COOLERS  
FOR BEVERAGE COOLERS  
FOR FLORIST REFRIGERATORS  
FOR VENDING MACHINES

Servel offers you a choice of standard SUPERMETIC models, air-cooled and water-cooled . . . in sizes from 1/4 H.P. through 1 H.P. Also capillary tube type units in the most popular sizes (1/4, 1/2 and 3/4 H.P.), unequalled for compactness and cost-saving efficiency. And to further protect your profits, to safeguard hard-earned goodwill, Servel's low-cost factory-extended warranty is available on all steel-case models. For super-value SUPERMETIC is your wisest choice! Write for the profitable proof . . . today.

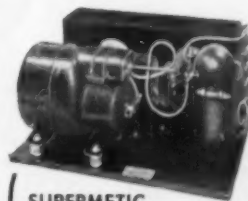
### SERVEL, INC.

Commercial Refrigeration Division  
Evansville 20, Indiana



### SUPERMETIC sealed electric POWER UNITS

For low, medium, and high temperature applications. Extra-compact. Precision-fitted. Lifetime, forced-feed lubrication. High power factor motors. F-12 and F-22 refrigerants. Sizes 1/4 through 7 1/2 H.P.



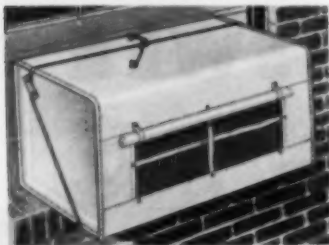
**SUPERMETIC  
MODEL SM-75**  
3/4 H.P. Standard  
Electric Condensing  
Unit

## Servel

**THE NAME TO WATCH  
FOR GREAT ADVANCES IN REFRIGERATION  
AND AIR CONDITIONING**

See exhibit at **HEATING AND VENTILATING EXPOSITION**  
Convention Hall, Philadelphia, January 24-28

window-type room air conditioning units against winter rust and deterioration. The cover is made



of a specially developed tough 22-ounce vinyl plastic-coated mate-

rial. The cover will withstand water, fire or cold without mildewing or cracking. Available for all popular makes of units in both the closed and exhaust-flap styles. Can be installed from either inside or outside.

Circle No. 144 on Reader Service Card

#### Air Filter

**Product:** "Aerosolve" high-efficiency filter.

**Manufacturer:** Cambridge Filter Corp., Syracuse, N. Y.

**Features:** Designed for application with critical process air conditioning in chemical, pharmaceutical, food processing, optional, photographic, electronic, metal working and other industries where clean air is essential, and in situations where a high percentage of dusts or fumes must be kept from escaping. The new filter consists of a permanent, cadmium-plated steel frame, which contains a completely assembled, easily replaceable filter cartridge. Three interchangeable cartridges with different filtering media are available, providing efficiencies of 95, 85 and 35%.

Circle No. 145 on Reader Service Card

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means quality products  
plus quality distribution



Your local wholesaler is your only source of supply for valves and fittings of the highest caliber . . . those made by Superior.

# Superior valve and fittings co.

Pittsburgh 26, Pennsylvania



Circle No. 69 on Reader Service Card

#### Cleanable Filter

**Product:** "Dust-Magnet" life-time air filter.

**Manufacturer:** Stoddard Industries, Inc., Chicago, Ill.

**Features:** Reported to last the life of the equipment, these filters are made of woven plastic which



can be cleaned quickly — average time is claimed to be only 2½ minutes — and put back in service. Ordinary dust and dirt are flushed out with tap water; oil and grease deposits can be removed easily by scrubbing with a sponge or brush and a detergent. There are five models in the new line, ranging from the equivalent of ½" to better than 1" of conventional filter. The woven plastic is mounted in an economical half inch frame with rust-proofed steel.

Circle No. 146 on Reader Service Card

#### Compact Conditioner

**Product:** "Weatherol" package commercial air conditioner.



**Manufacturer:** Therm-Air Mfg. Co., Hawthorne, N. J.

**Features:** Claimed to take far less floor space than most units, the unit is especially suitable for zone cooling and eliminates expensive ductwork. The hermetically sealed system never needs oiling.



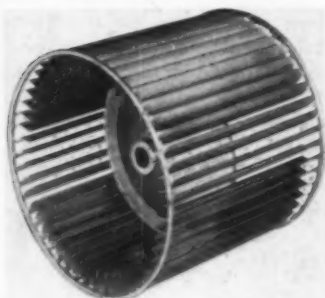
There is an internal spring mounted in the unit to eliminate vibration and insure noise-free operation. The self-contained package unit arrives assembled, wired, piped, dehydrated and tested, and requires no special tools or equipment for installation. Knock-out connections are provided for fresh air intake, end discharge grilles, and top duct take-off.

Circle No. 147 on Reader Service Card

#### Blower Wheel

**Product:** Mayne Products Co., Dayton, Ohio.

**Features:** This wheel features simplified construction, more air per dollar, and quieter operation. Fabricated with two blade louvers,



two center discs, two hubs and two set screws. Instead of an outmoded flat end ring, weakened with rivet holes and holding 48 or more sep-

arate blades, the Mayne wheel requires only two stamped strips of blades. One blade section is superimposed upon the other, then these two blade sections are interlocked together and welded into one strong rigid unit.

Circle No. 148 on Reader Service Card

#### Small Pump

**Product:** "Superflow" Pumps, H-3000 series.

**Manufacturer:** Graymills Corp., Chicago, Ill.

**Features:** A small compact pump that is smooth and quiet in operation and delivers an abundant,



steady flow of liquids of light viscosity. There is ample reserve horsepower to assure long motor life. The 3000 series pumps will operate with unusually low liquid level without splashing. They are made of strong, dense bronze castings and stainless steel, and the shaded pole motors are fully enclosed and fan cooled.

Circle No. 149 on Reader Service Card

#### Package Cooler

**Product:** "Cond-Air" self-contained package air conditioner.

**Manufacturer:** Elliott Engineering Co., Lynwood, Calif.

**Features:** Incorporating an evaporative condenser, the new cooler is cleaned to produce maximum cooling at minimum cost to the user. The system is said to produce results comparable to a water-cooled condenser — without the use of an atmospheric or forced draft cooling tower. Flexible as to location, the unit can be

installed in the garage, on the roof, in the attic or basement, or by an outside wall. Protected against weather and does not require any additional enclosure.

Circle No. 150 on Reader Service Card

#### Water Conditioner

**Product:** PN-700 water conditioner.

**Manufacturer:** Service Industries, Philadelphia, Pa.

**Features:** This chemical conditioner that makes water "wetter" by increasing its penetrating and dissolving power to quickly overcome the water repellance of hard to wet material, is used for cleaning air conditioning filters. One package dissolved in each 10 gallons of water used daily in air conditioning systems removes slime and algae from the coils and reservoirs and keeps the equipment clean.

Circle No. 151 on Reader Service Card

#### Window Conditioners

**Product:** "De Luxe" room air conditioners.

**Manufacturer:** Amana Refrigeration, Inc., Amana, Iowa.

**Features:** Built with increased cooling power and designed for flush mounting as one of 23 possi-



ble installed positions in double-hung or casement windows. Available in  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1, and  $1\frac{1}{2}$ -hp sizes. Two-knob control covered by decorative panel. Large evaporator and condenser to insure top performance. Cabinets are brown with gold trim. Larger air outlet with adjustable deflector.

Circle No. 152 on Reader Service Card

BUY FROM YOUR  
REFRIGERATION WHOLESALER

### Air Conditioning Line

**Product:** New line of air conditioning units.

**Manufacturer:** Clime-Matic Corp., South Norwalk, Conn.

**Features:** Line ranges from 2-ton household models to 30-ton industrial units. Models suited for wall, floor, or ceiling installation. Heavy-duty "Copelametic" semi-hermetic condensing units. Readily field adjusted. Controls are readily available. Heating coils are available. Can be supplied with any electrical characteristics. There are also models with self-contained gasoline or kerosene power units for use where no external power source is available.

Circle No. 153 on Reader Service Card

### MANUFACTURERS ONLY



**DESIGNED** specifically for application on air conditioners, the newly developed Telechron timer is intended to meet the needs of manufacturers of units up to one ton. Semi-automatic feature allows cooler to be automatically turned on or off at a designated time. One or two-day skip feature is also added. The unit is manufactured by Telechron Co., Ashland, Mass.

### Air-Cooled Chiller

**Product:** A chiller for use in conjunction with the manufacturer's remote air conditioner.

**Manufacturer:** Brown Products Co., Forest Hills, N.Y.

**Features:** This air-cooled chiller does away with the need for water cooling towers and accessories. It is a boon in areas where water is in short supply. The chiller is supplied completely factory-assembled and charged with refrigerant for easiest installation. All

wiring is housed in a terminal box. Automatic step operation is provided by using, for example, three



1-hp compressors instead of a single 3-hp compressor in the makeup of a 3-hp unit. Thus, when full capacity is not required, only one or two units operate.

Circle No. 154 on Reader Service Card

### PERFEX CORP. ENTERS AIR CONDITIONING FIELD

The Perfex Corp. of Milwaukee has announced its entrance into the field of refrigeration and air conditioning. Through the newly formed Refrigeration Div., Perfex will manufacture coils for room and residential air conditioning units, self-contained equipment, automotive cooling units, chilled water systems, hot water heating, portable refrigeration and air conditioning units.

Perfex also manufactures automatic controls for heating, air conditioning and appliances. W. K. Watts will head the new Refrigeration Div.

### 1954 ROOM UNIT SALES UP 18%, ARI ESTIMATES

Manufacturers' shipments of room air conditioners for 1954 will be about 1,230,000 units, compared with 1,044,691 units last year, or an increase of 18%, an-

### WORTHINGTON SETS 7 MEETINGS ON SERVICE

Worthington's Air Conditioning and Refrigeration Service department will conduct a series of seven field service meetings with special courses on servicing air conditioning, gas and oil heating equipment in seven cities throughout the country commencing Jan. 5, to be carried through Feb. 22. Invited to attend the lecture series will be all Worthington air conditioning and refrigeration distributor and dealer service representatives from coast to coast.

First meeting of the series will be held Jan. 5 with others slated to take place on Jan. 12, 19, 26 and Feb. 7, 15 and 22. E. D. Lindsley, assistant manager of Worthington's Holyoke Works air conditioning and refrigeration service department, will instruct the group on such topics as central system, package equipment, piping and piping layout, installation and maintenance, etc. Meetings are scheduled to be held in New York, Washington, D.C., Chicago, Atlanta, New Orleans, Los Angeles and Seattle.

### CANADIAN RSES TO MEET FEB. 7 & 8

The 16th annual convention of RSES (Canada) will be held on Feb. 7 and 8, 1955, at the Mount Royal Hotel, Montreal, P.Q. The convention will include the usual educational sessions and a banquet and dance under auspices of the Mount Royal Chapter of RSES.

nounces Geo. S. Jones, Jr., managing director of ARI.

About 90% of all units have been sold in the last five years. Sales figures for recent years, compiled by the Bureau of the Census and supplemented by ARI information, are as follows:

#### ROOM AIR CONDITIONER SHIPMENTS BY MANUFACTURERS

Calendar Year	Total	Window-Sill Type	Floor (console) Type
1946	29,835	16,409	13,426
1947	42,904	24,026	18,878
1948	73,638	62,592	11,046
1949	89,320	78,454	10,866
1950	200,911	187,224	13,687
1951	237,490	228,964	8,526
1952	365,451	357,106	8,345
1953	1,044,691	1,017,699	26,992
1954	1,230,000	1,218,000	12,000

*It's easy to see that*  
**PEAK PERFORMANCE**  
*is built into every*

# SPORLAN

## SOLENOID VALVE

**F**or no matter how large or small, whether pilot operated or direct acting, the first step to Sporlan Peak Performance is Simplicity of Design incorporating all proven, field-tested features.

The second step to Peak Performance is wound right into the Sporlan Solenoid Coil itself, then permanently sealed in... for Sporlan Solenoid Coils are layer wound (not random wound) and are interwoven with layers of cotton thread.

This construction prohibits build-up of damaging electrical pressure across the turns of wire, minimizing the possibility of coil burn-outs. After being twice dipped and baked to thoroughly impregnate the cotton thread insulation, each Sporlan coil is dipped in a protective sealer and again baked to prevent any moisture infiltration.

*Test this easy-to-see Sporlan formula...*  
Order several Sporlan Solenoid Valves from your wholesaler today and get Peak Performance on YOUR Solenoid installations!

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*Any size,  
any refrigerant or  
connections... SPORLAN  
has a Solenoid Valve  
to fit your job!*



## ALL-YEAR SERVICE . . .

*Continued from page 86*

a bellows to seal the stem. Packed valves have to be tightened periodically and packing changed less frequently. The bellows valve usually requires no attention until the bellows fails, requiring its replacement. These valves sometimes have graduations between closed and fully open, giving a modulating effect.

The  $\frac{1}{2}$ " valve for small radia-

tors and the  $\frac{3}{4}$ " size for large ones will take care of most of these replacements. They come with their own union fittings, which connect to radiators or coils to facilitate disconnecting. Here again, is a readily stocked item for which there is a continuous replacement demand. The replacement can be readily made by any serviceman.

Thermostatically controlled valves, which need also be stocked in only the  $\frac{1}{2}$ " and  $\frac{3}{4}$ " sizes, can be a very profitable addition to most heating and air conditioning

systems, both to the contractor and the user.

These valves are obtainable with the controlling element self-contained and compensated for the temperature difference likely to exist at the radiator and in the room. They can also be had with a capillary attachment so that the temperature can be controlled from a considerable distance from the valve.

Installation requires only the removal of the old manual valve and its union fitting and replacing with the new one. This will prevent the temperature rising above the valve setting, giving much improved comfort conditions and often amazing fuel economy. In air conditioners, the sensing bulb can be placed in the return air stream.

Radiator valves for one pipe systems come in larger sizes than for the two pipe systems and do not permit modulating so well since the condensate must return through the same valve that the steam enters, but in the opposite direction. Where it is desired to connect an air conditioning coil or two pipe radiator to a one pipe system, with or without a modulating or thermostatic valve, it can be done as indicated in Fig. 3.

**Check Piping Supports:** The reading on the steam pressure gauge does not indicate the circulating pressure, since equalizer connections in many systems give virtually the same pressure on the steam and return lines.

Most steam heating plants depend on gravity, at least in part, for the return of the condensate to the boiler. This makes it important that all pipes pitch in the proper direction and that no traps or pockets be allowed to develop. Since condensation takes place in all parts of the system, each line must be installed and maintained to drain properly.

Alterations in the building structure such as the addition of doors or windows, the moving of partitions and installation of additional air conditioning or heating equipment present piping problems with which the air conditioning contractor should be familiar. A good rule to remember is, when a line must rise to a higher level or loops around an obstruction, it must be

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for the Refrigeration and  
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most complete line on the market

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- New Selection Chart  
—easy-to-read, accurate way  
to select cartridge type  
driers up to 100 tons.

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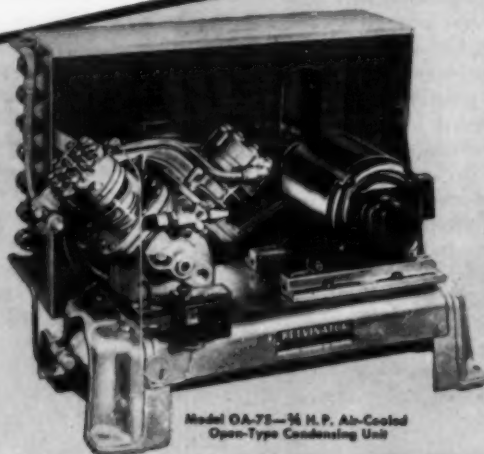
**DRIERS • FILTERS • STRAINERS**

Circle No. 72 on Reader Service Card





Get **ALL** the **EXTRAS** at **NO EXTRA COST**  
**Get Kelvinator**  
**Open-Type Condensing Units**



Model OA-75— $\frac{1}{2}$  H.P. Air-Cooled Open-Type Condensing Unit

Kelvinator offers a precision built line of open-type units famous for dependable performance and trouble-free service, yet they are priced realistically, let you meet any competition. A complete line of air-cooled, water-cooled, combination air- and water-cooled, and truck type from  $\frac{1}{4}$  H.P. air-cooled through 5 H.P. water-cooled.



Model K353CR,  $\frac{1}{4}$  H.P. Capacitor Start  
**Kelvinator Polarophore Internally Mounted, Hermetically Sealed, Condensing Units.**  
 A complete line from  $\frac{1}{5}$  H.P. through  $\frac{1}{2}$  H.P. for a wide range of applications.



**Packaged For Profits!** Kelvinator Sealed Compressors. Complete packaged compressors for household and commercial cabinet replacement now available from Kelvinator, for the first time. (Model DK 352C  $\frac{1}{4}$  H.P. capacitor start, illustrated.) High capacity, competitively priced compressors. 10 models.  $\frac{1}{4}$  H.P. through  $\frac{1}{2}$  H.P.

**EXTRA LARGE!**  
**Air-Cooled Condensers**

**EXTRA LARGE!**  
**Receivers**

**EXTRA CAPACITY!**  
**Water-Cooled Condensers**

**EXTRA!**  
**Heavy-Duty Construction**

**EXTRA!**  
**Easy-to-Service**

**NO EXTRA INVENTORY COSTS!** \$25. will cover your parts investment for all models in seals, valve plates, gaskets, etc.!

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 American Motors Corporation, Dept. CR-1  
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**Kelvinator**

Specialists in Refrigeration Since 1914

Circle No. 73 on Reader Service Card

**JANUARY, 1955 • COMMERCIAL REFRIGERATION**

## USEFUL

### BULLETINS • BOOKLETS • CATALOGS

**INDIVIDUAL SPECIFICATION SHEETS** on each of the many items of self-contained commercial refrigeration equipment manufactured by Utility Refrigerator Co. are bound together to form the new catalog issued by this organization. Each specification sheet consists of an illustration of that particular model, backed up by complete specifications information.

Circle No. 111 on Reader Service Card

**DIRECT DRAW TAPS**, both remote and self-contained, are illustrated and described in a 2-page catalog sheet issued by Nor-Lake, Inc. All features are covered completely, and specifications are listed.

Circle No. 112 on Reader Service Card

**THREE TYPES OF COPPER TUBE AND PIPE** are covered in a new catalog available from Revere Copper & Brass, Inc. Section 1 of the catalog describes and illustrates the applications of water tube for general use in domestic or industrial piping systems. Section 2 does the same job for dehydrated and sealed tubing for air conditioning, refrigeration, and control applications. Section 3 covers copper and red-brass pipe for use with threaded or silver-brazed fittings where heavy, non-rustable pipe is required.

Circle No. 113 on Reader Service Card

**INDUSTRIAL APPLICATIONS** and specifications for natural and composition cork are available in the 1955 Dodge Industrial Cork Co. bulletin. This 4-page bulletin (S-55) lists the physical properties and uses of cork and cork compositions. Sheet sizes and thicknesses are given.

Circle No. 114 on Reader Service Card

**A COMPLETE LINE** for dealers of soda fountain, luncheonette, and drink dispensing equipment is covered in the new catalog available from Everfrost Sales, Inc. This catalog includes a number of newly added items to the "Everfrost" line, and provides a full description of all products and their features.

Circle No. 115 on Reader Service Card

**A CATALOG PAGE** with complete specifications on its Model 3506MB self-contained 6' dairy case now is available from Sherer-Gillett Co. A feature of this sheet is a 4-color illustration of one of these cases completely stocked for use.

Circle No. 116 on Reader Service Card

**TWO NEW DATA SHEETS** that describe and illustrate Cash Acme's new FR back pressure relief valves are now available. The data sheets give complete information about the valves, their application, how they work, their construction and special features.

Circle No. 117 on Reader Service Card

(Turn to page 111 for more Useful Literature)

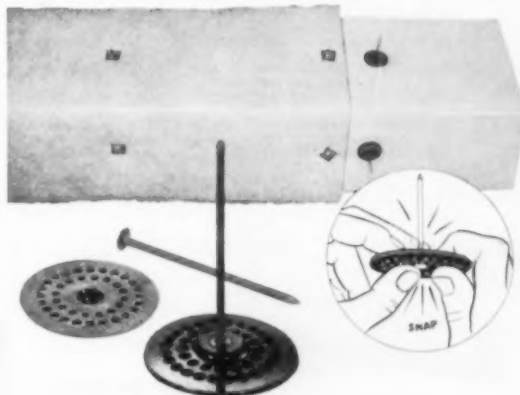
and AIR CONDITIONING • JANUARY, 1955

## 2 New products eliminate waste time when anchoring insulation hangers

### ① TUFF-BOND QUICK-SET adhesive dries in one hour

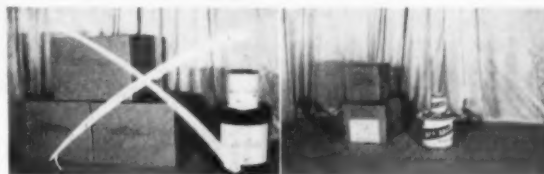


Insulation men no longer have to sit around waiting for adhesive to "set" or make a trip back to complete the job, thanks to amazing new Tuff-Bond Quick-Set adhesive. After just one hour, Quick-Set makes a firm bond on smooth brick, cement, steel for practically any purpose. Resistant to moisture and alkalies, its temperature range extends from 30°F below zero to 250°F above.



### ② TUFF-WELD nylon hangers less bulky

These new lightweight hangers eliminate the need for bulky boxes when working on ladders or scaffolds. . . dozens are carried right in the pocket. . . the spindle is snapped into the nylon base plate just before using. (Hangers are also available factory-assembled.) Tuff-Weld nylon hangers mean great savings in labor, freight charges and warehouse space. They are exceptionally strong and resistant to practically all chemicals.



Here's the space occupied by 3000 old-fashioned, bulky type insulation hangers and the cement needed to apply them.

Here's the small space occupied by 3000 new Tuff-Weld insulation hangers and Tuff-Bond Quick-Set adhesive used to apply them.

Write today for literature and prices

**GOODLOE E. MOORE**

INCORPORATED

DANVILLE, ILLINOIS

Circle No. 74 on Reader Service Card

# SYSTEM

# ENGINEERED

## Acme

### COMPONENTS

*... standard of the industry for over 35 years*

Since 1919, Acme has continuously served the development of air conditioning and refrigeration with system-engineered components, both custom-designed and standard. The fund of product and application knowledge thus built up is reflected in the products Acme makes today. Acme products are manufactured in capacities proved to be most in demand and are designed to cut installation costs. Job estimating is simplified. When properly specified, they will match perfectly the other components of an air conditioning or refrigeration system to provide balanced, full-capacity performance. When you stock and sell Acme system-engineered components, you gain — and hold — satisfied customers.

*there's always a demand for these*

## Acme

*system engineered products*



#### CONDENSERS

Shell and Tube type,  $\frac{1}{2}$  to 30 tons. Shell and Coil type,  $\frac{3}{4}$  to  $7\frac{1}{2}$  tons. Integral fin tubing puts most capacity in the smallest sizes of units.



#### LIQUID RECEIVERS

Liquid storage for systems from 3 to 150 tons: F-12 and 22, menthyl chloride and ammonia. Top quality construction throughout.



#### HEAT EXCHANGERS

Boost efficiencies of 3 to 150-ton systems. Extended bar-type fins for maximum heat transfer, compact size. Easy and economical to install.



#### HI-PEAK COOLERS

Supply ample chilled water for peak demands of drinking fountain systems, manufacturing processes. Capacities 3 to 10 tons.

For complete details on these products, write for Acme's new Catalog of System Engineered Components.



## ACME INDUSTRIES, INC.

JACKSON, MICHIGAN

Manufacturers of Quality Air Conditioning and Refrigeration Equipment since 1919

**THE FLOW-COLD LINE**  
... better business  
in "packages" for you



Flow-Cold  
Cooling Towers  
2 thru 15 tons



Flow-Temp  
Remote Room  
Conditioners



Flow-Temp Heat  
Pumps and  
Flow-Cold Liquid  
Chillers — 2 thru  
15 tons

Circle No. 70 on Reader Service Card

JANUARY, 1955 • COMMERCIAL REFRIGERATION



## USEFUL LITERATURE . . .

Continued from page 109

**A QUICK REFERENCE SOURCE** for information on all refrigeration products produced by Kramer Trenton Co. is offered in the company's newly published catalog (R-300). In addition to product photographs, dimensional tables, capacity ratings, shipping weight information, and other pertinent data, this catalog includes complete "rapid selection tables" for both high and low temperature applications.

Circle No. 118 on Reader Service Card

**A COMPLETE PICTURE** of the insulating properties of "Vapo-Wall" low temperature pipe insulation made of Dow Styrofoam, is offered in the 4-page illustrated folder published by MMM, Inc. Variety of applications and ease of installation also are stressed.

Circle No. 119 on Reader Service Card

**400-TON CAPACITY CONDENSER** and fluid cooler is the subject of Bulletin 123 published by Niagara Blower Co. This catalog sheet illustrates the unit, shows the process of field erection, and provides a complete flow diagram.

Circle No. 120 on Reader Service Card

(See page 92 for Air Conditioning Literature)

## SIGNAL-U COMPRESSOR RACKS

Save 66% Space! Simplify Service!  
Easy to Install!



- Meet any compressor storage need!
- Engineered to be most versatile and rigid racks on market!
- Over 100 possible installations in a 15-bay unit!
- No sizes! Stock standard items! Assemble each job to size!
- Made of 12-gauge electro-welded tubular steel!

Write for prices and information on our complete line of compressor racks, backroom storage racks and pallet racks.

**SIGNAL-U MFG. CO.**

P. O. Box 66 • CANFIELD, OHIO

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and AIR CONDITIONING • JANUARY, 1955

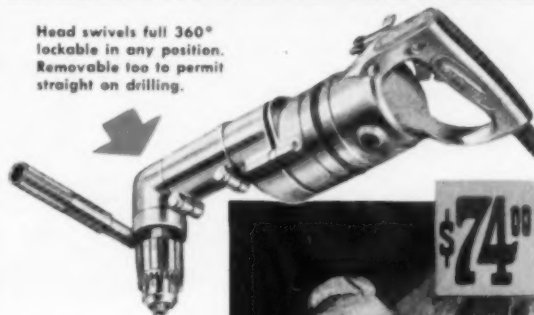
## FOR Tight Spot DRILLING



MODEL  
**S-412**

## RIGHT ANGLE DRILL

Head swivels full 360°  
lockable in any position.  
Removable too to permit  
straight on drilling.



### 3 Drills in 1

#### THREE SPEEDS

- 450 rpm . . . For  
Straight-on Drilling
- 675 rpm . . . For Right Angle  
SMALL Hole Drilling
- 300 rpm . . . For Right Angle  
BIG Hole Drilling



For Faster Easier Drilling in WOOD • METAL  
TILE • FORMICA • CONCRETE • CERAMICS • ETC.

Light weight (only 9 lbs.) compact and easy to handle. Drills clean cut holes fast . . . ideal for all tight spot drilling. Ruggedly built . . . all ball and roller bearings throughout and powered by husky MILWAUKEE-Built heavy-duty motor. It provides perfect combination of power and choice of speed to suit practically any drilling job.

DRILLS PERFECT HOLES UP TO 2-9/16" DIA.

Handles any type of bit, hole saws and the famous MILWAUKEE Selffeed Bit for big hole drilling. Extension shanks with couplings available in lengths to 18" adding further to the drill's utility value for normally inaccessible drilling jobs.



SELF-  
FEED  
BIT



Complete Kit  
Model 412-K  
**\$88.75**

Includes S-412 drill.  
Assorted bits, wrenches and  
steel carrying case

Write For Bulletin RAD 5

**MILWAUKEE ELECTRIC TOOL CORP.**

5214 W. STATE STREET

MILWAUKEE, WISCONSIN

Circle No. 77 on Reader Service Card

# NEW PRODUCTS

For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your request will be forwarded directly to the companies concerned.

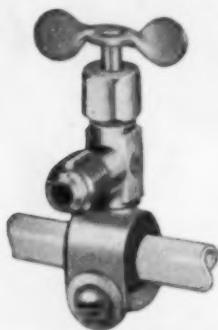
(For Air Conditioning Products turn to page 94)

## Hermetic Piercing Valve

**Product:** Valve No. 340-C for charging, testing, and purging hermetically sealed units.

**Manufacturer:** Imperial Brass Manufacturing Co., Chicago, Ill.

**Features:** The valve is of the multi-size type and one valve fits 3 different sizes of tubing —  $\frac{1}{4}$ ",



$\frac{5}{16}$ " and  $\frac{3}{8}$ " O.D. This makes for exceptional convenience in service work. Also usable for other applications where it is desirable to tap into a tubing line. Double lead thread provides fast operation. Valve clamps on tubing line and neoprene gasket provides a tight seal. After service is completed, valve is closed and left on line for quick, convenient future service.

Circle No. 161 on Reader Service Card

## Gasket for Round Corners

**Product:** "Curvall" Series 400 rubber gasket to eliminate the need for notching the gasket when applying it around corners.

**Manufacturer:** Jarrow Products, Inc., Chicago, Ill.

**Features:** This new rubber gasket was specifically designed and

engineered for late model refrigerator and freezer boxes with curved



doors. "Curvall" goes on easily and smoothly, doing the same job at much less cost than the pre-formed frame gaskets. It will take all curves, bends, or angles in stride, with no notching needed. Manufactured in 11 different sizes for universal application.

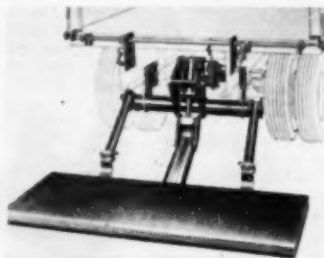
Circle No. 162 on Reader Service Card

## Elevating End Gate

**Product:** Low-cost elevating end-gate for delivery trucks.

**Manufacturer:** Gar Wood Industries, Inc., Wayne, Mich.

**Features:** The new end-gate will reduce delivery cost up to 50%, it is claimed, yet costs as



little as 50 cents a day. It is designed for installation on a  $1\frac{1}{2}$ -ton or larger truck and lifts or

lowers up to 2,000 lbs. The delivery driver alone can handle most deliveries with the end-gate. The gate has full power operation for easy loading and unloading, positive safety controls at all stages of operation for protection of personnel and materials, and simplified, compact construction for easier and less maintenance.

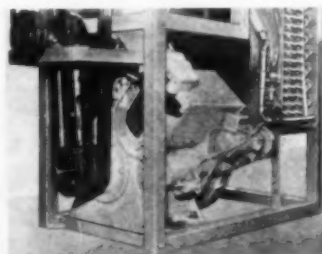
Circle No. 163 on Reader Service Card

## Diesel Unit

**Product:** Diesel power unit as optional equipment on "Wilcool" truck refrigeration units.

**Manufacturer:** Wilkinson Mfg. Co., Fort Calhoun, Neb.

**Features:** Diesel operation is especially suitable with Wilcool refrigeration units since the units are designed to run at constant speeds. Diesel power unit develops 13 hp at 1800 rpm. Power and refrigeration unit combined weigh only 1300 lbs. Diesel refrigeration unit main-



tains -10 F in trailer reefers with 6" of insulation. Unit also protects perishables in cold weather by maintaining temperatures above freezing. Installation of the diesel refrigeration unit is a body shop operation that most truckers can handle. Refrigeration units eliminate need for defrosting on the road, have a 6-ton compressor and an automatic condenser cut-off.

Circle No. 164 on Reader Service Card

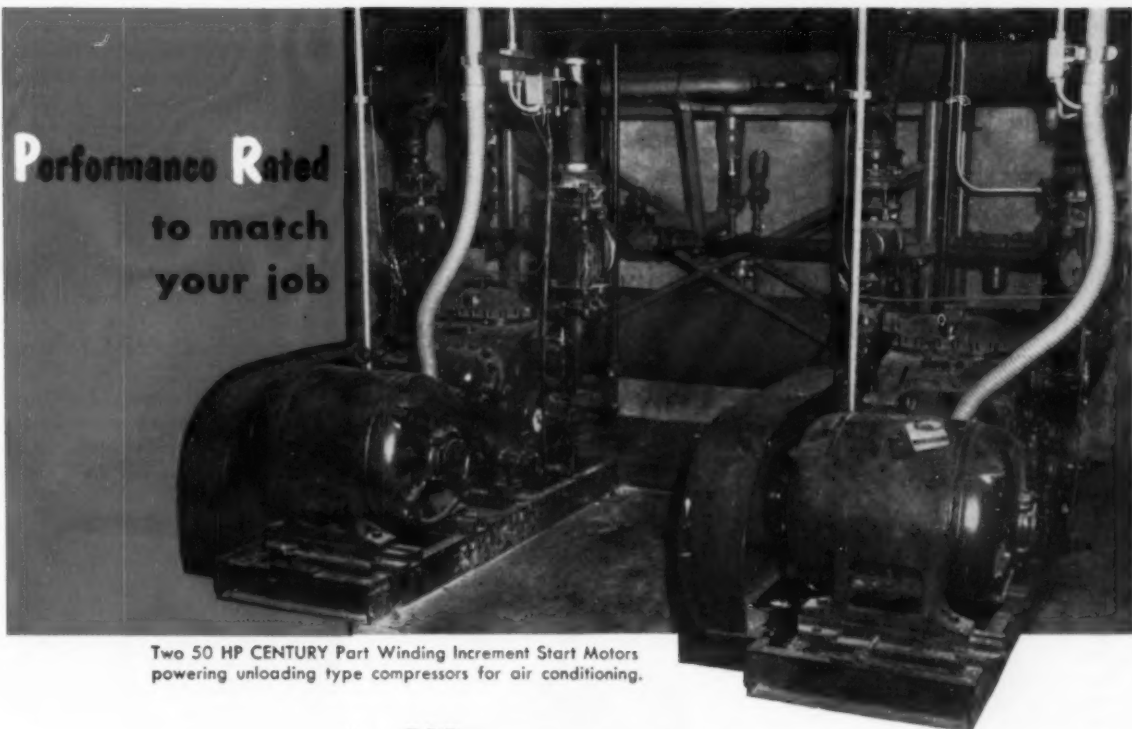
## Leak Detector

**Product:** Detector for locating gas leaks.

**Manufacturer:** Otto Bernz Co., Inc., Rochester, N. Y.

**Features:** Even gas leaks of minute concentration react with a flame heated copper plate in the detector's chimney, causing a

**Performance Rated**  
to match  
your job



Two 50 HP CENTURY Part Winding Increment Start Motors  
powering unloading type compressors for air conditioning.

Here's how  
part winding increment  
starting works for you:

Motors of the increment starting type operate by electrically separating the motor winding into two parts. One half the winding operates when starting, delivering roughly half the normal starting torque, drawing about one half the normal starting current. After a few seconds the increment starting control connects the second half of the winding into the circuit delivering full torque and current.

The three step starter uses a series resistance to further reduce the current on the first step of the starter.

**Where you need low starting current  
... you can save with**

*Century*

**Part Winding  
Increment Start  
MOTORS**

Starting large motors where there is a limitation on the amount of starting current may be done easily and inexpensively with CENTURY Part Winding Increment Start Motors and control.

Available from stock in all popular sizes, enclosures, and mountings.  
1 to 400 HP polyphase.

- Drip proof
- Dust proof
- Splash proof
- Explosion proof

**HORIZONTAL OR VERTICAL MOUNTING**

Because all popular CENTURY Motors have provisions for part winding increment starting, they are available from stock in the complete Performance Rated Century line.

**Performance Rated**  
**1/8 to 400 H.P.**



VISIT CENTURY'S BOOTH NO. 900,  
INTERNATIONAL HEATING AND  
VENTILATING SHOW — PHILADELPHIA, JAN. 24-28

**CENTURY ELECTRIC COMPANY**

1806 Pine Street • St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

noticeable change of color and intensity in the flame. The fuel cylinder is self-sealing with a neoprene washer to prevent leakage, and a safety relief valve for extra



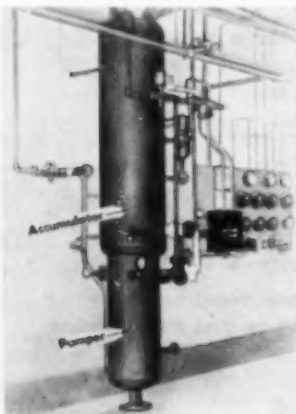
protection and storage. Thus, the burner unit can be removed with no danger of fuel leakage. Copper reaction plates are designed for easy changing.  
Circle No. 165 on Reader Service Card

#### Refrigerant Recirculator

**Product:** Liquid refrigerant recirculator.

**Manufacturer:** J. E. Watkins Co., Maywood, Ill.

**Features:** Forces all evaporators to maximum efficiency with positive full-flooding. Opening of



the expansion valve full-floods the coil and slugs the liquid over into the recirculator. Connects between the evaporators and compressor of commercial or industrial refrigeration systems of any tonnage. Guarantees full protection to the com-

pressor, catches the excess (sub-cooled) liquid, and recirculates it under pressure to the evaporators through the expansion valves. Makes possible elimination of surge drums, float valves, thermal valves, and mechanical pumps, and the use of hand needle valves as expansion valves.

Circle No. 166 on Reader Service Card

#### Vibration Mounting

**Product:** Fully enclosed spring-type vibration mounting.

**Manufacturer:** Vibration Mountings, Inc., Elmhurst, N. Y.

**Features:** The unit is of telescopic construction, fully enclosed in semi-steel housing. The steel



spring mounting with chrome vanadium springs, permits greater deflections necessary for high isolation efficiency. The units offer increased carrying capacity without increase in physical size. They come pre-set, but may be re-adjusted at any time in the field.  
Circle No. 167 on Reader Service Card

#### Cable Stapler

**Product:** Automatic stapler for electrical cable and copper tube lines.

**Manufacturer:** Heller Co., Cleveland, Ohio.

**Features:** The gun shoots a heavy staple with each easy squeeze of the trigger, fastening cables or tubes securely to many types of building materials. Using the tool a man can draw these lines in  $\frac{1}{5}$  the usual time, with one hand free to hold the cable or tube. It loads heavy wire staples in many leg lengths up to  $\frac{3}{4}$ " long. Its auto-

matic chamber feeds these large staples one at a time into a driving hammer. Staples are set around the wire or tube to a pre-determined depth, avoiding fracture to the material.

Circle No. 168 on Reader Service Card

#### Sliding Door Cooler

**Product:** Sliding door beverage cooler.

**Manufacturer:** Nor-Lake, Inc., Hudson, Wis.

**Features:** The unit is built for heavy duty use and is constructed of cold rolled welded steel, with heavy-gauge galvanized liner, cop-



per tubing and stainless steel sliding doors. Adjustable temperature control and bottle decapper are standard equipment, and double compressor grills are provided for island operation if desired. Beverage capacity of the cooler is 150 12-oz. bottles or 180 of the 7-oz. size. It will hold 300  $\frac{1}{2}$ -pint milk bottles or 600  $\frac{1}{2}$ -pint cartons in vertical positions.

Circle No. 169 on Reader Service Card

#### Nameplates

**Product:** Pre-masked nameplates for unpainted surfaces.

**Manufacturer:** C & H Supply Co., Inglewood, Calif.

**Features:** The thin anodized, etched aluminum nameplates are completely masked to allow painting of an article after the trademark or label is applied, thus building up the paint around the edge of the trademark and making it an integral part of the item to which it is affixed. The masking is easily stripped off the metal after painting. The nameplates are backed by the same pressure sensitive adhesive which has been used on the unmasked plates and which makes





### SUPER MARKET EXPANDS USE OF CORKBOARD INSULATION

After its experience with the effectiveness of corkboard for the insulation of low-temperature spaces, Albany Public Markets, Inc., made two additional installations — one in 1951, the other in 1952. No maintenance work of any kind has been required on these installations since the erection jobs were completed by United Cork Companies' erectors.

Engineering design of the installations was worked out by the Albany branch office of United Cork Companies in co-operation with Albany Public Markets, Inc. Architect for the building was Edward J. Toole.

#### Advantages of United Cork Service

The availability of complete engineering and erection service from nearby branch offices is one of the major reasons why thousands of operators of refrigerated spaces have selected United Cork Companies' BB (Block-Baked) Corkboard as their own low-temperature insulation. Engineering staffs and erection crews are prepared to handle the entire insulation job, and to work in close cooperation with owners, architects and refrigeration contractor.

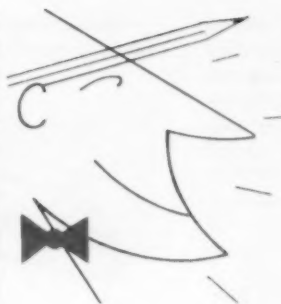
This nationwide service, which includes a thorough check on the actual performance of the installation, assures customers of the most effective use of the inherent advantages of corkboard insulation.

The type of corkboard produced by United Cork Companies is also of major importance in the effectiveness of insulation jobs. Carefully selected grades of cork are formed into corkboard by United Cork's patented process of block-baking (BB).

Thus United Cork Companies offers a completely integrated responsibility covering every step of the insulation job—from selection of raw materials, through manufacturing, engineering design, and erection of the insulation, to checking of performance.

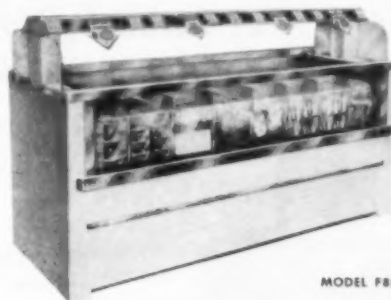
For more information about the scope of United Cork Companies' service—and about the effectiveness of installations in the toughest service—just drop a line to United Cork Companies, Dept. (I-8), Kearney, New Jersey.

Circle No. 80 on Reader Service Card  
and **AIR CONDITIONING • JANUARY, 1955**



*sure  
you're a  
show-off!*

Showing off the very best you have to offer . . . in the most attractive way. And that's why you choose PENGUIN MERCHANDISERS . . . the quality display cabinet to display your quality merchandise.



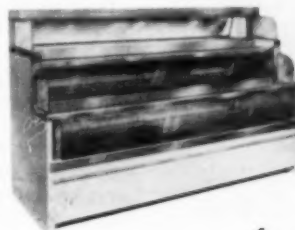
MODEL F88GA

This great new line of Frozen Food, Ice Cream and Milk Merchandisers in either the massive 88-inch or convenient 68-inch length is the result of ingenious design and modern engineering genius resulting in Super-Sales for you. We'll just list a few of the features . . . jiffy defrosters (automatic defrosting in dairy cabinets), baked enamel exteriors, aluminum and stainless steel trim, recessed toe space, welded steel frame, fibre glass insulation, multi-pane glass front, fluorescent lighting, finned cooling in dairy cabinets, plate cooling in other models.

Plenty to show off? You bet . . . and plenty of beautiful, gleaming area to show it off in! Let the name—Penguin—stick in your mind . . . let the fame ring in your register.

MODEL D88DW

MODEL F88GW



**PENGUIN SALES**

15169 Northville Rd.  
Dept. C-1  
Plymouth, Michigan

We'd like to show off our merchandise to best advantage.  
Send literature on your full line.

Name \_\_\_\_\_  
Firm Name \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

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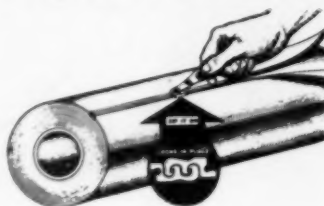
them permanent, as well as easy to apply without screws or rivets. They are available in a wide range of colors and come in a highly reflective or matte finish. They may be applied to any smooth curved or flat surface.

Circle No. 170 on Reader Service Card

#### Pipe Covering

**Product:** "Protekinsul" pre-fabricated plastic covering to protect insulation against weather, abrasion, chemicals, and mildew.

**Manufacturer:** Miracle Adhesives Corp., New York, N. Y.



**Features:** This pipe covering finish furnished to exact size simply zips on, and backs in place

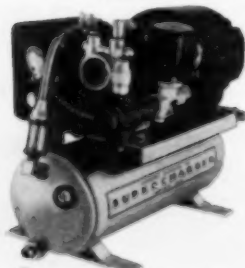
with its patented integral all poly-vinyl closure that insures a watertight and airtight longitudinal joint, and provides the ultimate in ease of application. It requires no cutting, fitting, or sewing in the field, thereby effecting substantial time and labor savings. Insulated fittings are wrapped with vinyl tape and all joints sealed with a brush-applied vinyl sealer.

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## The Exclusive, Patented Operating Principle of Carbonic Dispenser Beverage Dispensing Equipment . . . Opens the door to great new sales volume and profit for you



SODAMASTER Self-Contained, Refrigerated Dispensers.



SUPERCHARGER CARBONATORS  
100 Gals.  
Per Hour Capacity



MIX-MONITOR 5-in-1 FAUCETS, 3 Carbonated Flavors Plus Jet and Soda Stream, or Other Combinations with Still Drink and Plain Drinking Water

#### MAIL THIS COUPON TODAY

For literature outlining the opportunity now open to make bigger profits selling Carbonic Dispenser Sodamaster, Mix-Monitor Faucet and Supercharger Carbonator Equipment.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

THERE IS NOTHING to match the superior performance of Carbonic Dispenser Beverage Equipment . . . and there is nothing to match the peak sales volume and profit waiting for you as a Carbonic Dispenser outlet. It adds up as simply as A, B, C. You can guarantee your customers that soft drinks and mixers served by Carbonic Dispenser equipment equal or better the quality of bottled beverages in every sense. The logical customers for this equipment right in your area are almost countless, the market unlimited. And Carbonic Dispenser will provide you the simple proof to pass along to each prospect, explaining how the equipment costs him absolutely nothing but actually **PAYS FOR ITSELF** from savings.

These are the facts . . . and Carbonic Dispenser would like nothing better than the opportunity to discuss with you the amazing successes of other distributors and dealers. Why delay any longer getting full details?

**ONLY CARBONIC DISPENSER BEVERAGE EQUIPMENT HAS THE PUMP SENTINEL, AUTOMATIC, UNFAILING PUMP PROTECTION DEVICE.**



General Offices: Canfield, Ohio  
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1051 Randolph St., Los Angeles, Calif.

IN CANADA: GENERAL EQUIPMENT CORP., LTD., TORONTO, ONT.

Circle No. 81 on Reader Service Card

#### Expansion Joint

**Product:** An expansion joint designed to compensate for thermal expansion, reduce vibration and noise transmission, and allow for misalignment in piping systems.

**Manufacturer:** Clifford Mfg. Co., Waltham, Mass.

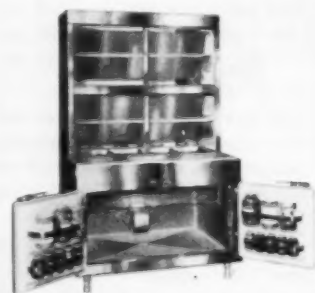
**Features:** Constructed around a special seamless bronze bellows which is hydraulically formed and very rugged. Eliminates need for stuffing boxes and glands and permits unitized construction. No servicing, adjustment, or take-up required. Casing is of corrosion resistant seamless brass tubing. Ample length of tubing is provided at each end for normal sweat fitting connection to the system.

Circle No. 172 on Reader Service Card

#### Food Display Case

**Product:** Refrigerated display case.

**Manufacturer:** Stanley Knight Corp., Chicago, Ill.



**Features:** The case features the full width door opening, made possible by elimination of the center post. Convenient door shelves for easy-to-reach storage and door latches at fingertip level are also fea-

tured on the new case. It has sliding glass doors that roll from the top, eliminating the messy, dirty, hard-to-clean door tracks.

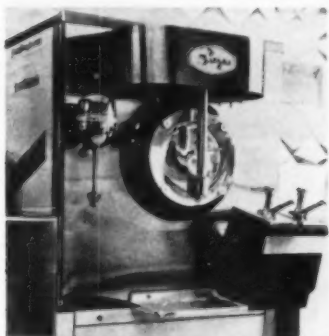
Circle No. 173 on Reader Service Card

#### Milk Shake Machine

**Product:** M1-190 "Frigid-mixer" milk shake machine.

**Manufacturer:** Sweden Freezer Manufacturing Co., Seattle, Wash.

**Features:** The new model eliminates all switches on the front and gives the machine a more attrac-



tive and streamlined appearance. It makes the cleaning operation easier. The few necessary controls have been housed in a small, stainless steel, removable box that plugs in like a radio tube and is located under a lift-up hood. They are out of the way of the dispenser who does not need to touch them during the day, as actual operation is done by an electrically-operated footswitch which opens the serving gate and also controls the feeding of fresh mix into the cylinder from the refrigerated mix tank to replace the product drawn. The control leaves the operator's hands free to hold two milk shake containers at one time.

Circle No. 174 on Reader Service Card

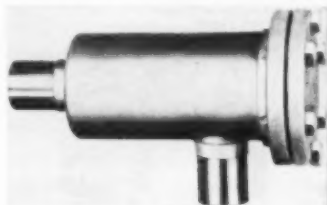
#### Strainer Line

**Product:** Strainers to protect valves and pumps in refrigeration applications and general usage.

**Manufacturer:** Detroit Controls Corp., Detroit, Mich.

**Features:** Fabricated of ferrous metals and non-ferrous metals for use with specified fluids, the strainers are offered in cleanable and non-cleanable models. The strain-

ers are built with reinforced monel and stainless steel screens of 60 and 80 mesh, with up to 180 sq.



in. of screen area. Finer meshes are furnished on order. These strainers are available with con-

nection sizes up to 5/8" S.A.E., 3-5/8" sweat, and 1-1/4" F.P.T. with flange.

Circle No. 175 on Reader Service Card

#### Automobile Refrigerator

**Product:** Mechanical refrigerator designed especially for use in automobiles.

**Manufacturer:** A.R.A. Mfg. Co., Fort Worth, Texas.

**Features:** Compact unit measures about 13" high, 12" wide and 10" deep. Unit has capacity of 960

## 3 new reasons why mechanics look to Bonney for refrigeration tools

Mechanics depend on Bonney for tools that help them do a better job of refrigeration servicing—faster.

It's mechanic preference that makes Bonney the leader in the refrigeration field. Here are three new examples of how Bonney builds its line to meet the mechanic's needs:

### BONNEY P319 FORKED-WEDGE SEPARATOR



Makes quick work of removing pulleys. Especially useful in places where limited space makes the use of a screw-type puller impossible. The Forked-Wedge Separator is inserted between the pulley hub and the compressor or motor housing after the set screw has been removed. A few taps on the end of the Separator brings the pulley off the shaft.

### BONNEY 1252-SPORLAN EXPANSION VALVE WRENCH



This thin open-end wrench has a 1 5/8" opening. The 30" head makes it easy to remove the power element from the body of Sporlan expansion valves.

### BONNEY RF-7 VALVE STEM SOCKET

This 1/4" male drive socket is especially designed for use on Frigidaire valves.

*Bonney makes a complete line of tools designed specifically to meet the needs of the refrigeration mechanic and service man.*



BONNEY FORGE & TOOL WORKS, ALLENTOWN, PENNSYLVANIA  
Circle No. 82 on Reader Service Card

cu. in., will hold 18 bottled drinks, 24 12-ounce cans or an equivalent amount of food. Can be installed below and in front of the instrument panel, on the floor behind the front seat or in the trunk compartment. Unit operates off a car's air conditioning system. Installation requires about an hour. Unit can be removed and transferred to another automobile when desired. Refrigerator opens from the top. Made from zinc-coated metal; finished in baked enamel. Insulation is  $\frac{1}{2}$ " thick. Drain in the bottom facilitates

cleaning. Cooling system consists of  $12\frac{1}{2}'$  of three-eighths copper tubing covered by an expanded metal grille. Unit has a  $\frac{1}{2}$ -ton automatic expansion valve.

Circle No. 176 on Reader Service Card

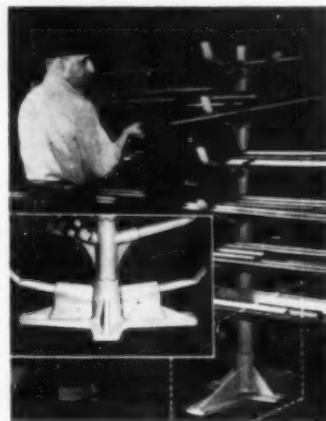
#### Base Brackets

**Product:** Brackets for stock racks for storing pipe and tubing.

**Manufacturer:** Brown Engineering Co., Reading, Pa.

**Features:** Up to 25% greater storage capacity is given to sec-

tional stock racks now by simple new base brackets. Slipped over the base flanges of stock racks and secured by a single bolt through each, the base brackets provide additional



stock supporting arms 10" off the floor, where they carry the heaviest materials conveniently. Since the stress is borne almost directly by the floor, the pay load carried by the complete rack is increased by supplementing the upper post arms on new or existing racks. They provide efficient orderly storage for long lengths of heavy bar, rod, pipe or tubing. Stocks can now be stored and removed either from the sides or from the ends, and racks are readily moved since they require no bracing or attachment to floor.

Circle No. 177 on Reader Service Card

## NATIONAL PNEUMATIC CO., INC.

opens the door to new service business for YOU!

● Need to expand your business? Want more income? Here is an exceptional opportunity for all qualified air conditioning and refrigeration equipment servicemen.

● National Pneumatic Co., Inc., is introducing a brand-new electro-hydraulic product that will be wanted by every alert businessman, especially owners of supermarkets, restaurants, stores and buildings. In fact, anyone who uses air conditioning or refrigeration equipment is a potential customer. Thus, it sells to your present customers — and helps you win new customers.

● This product is simply designed — easy to operate. Learning how to service it takes only 4 hours — through a special "one lesson" correspondence course that you can study in your own office, shop or home.

● With every unit, National Pneumatic Co., Inc., issues a 1-year warranty to the owner and a service policy to you, the territorial serviceman. This policy is extremely liberal. It guarantees payment to you *in advance*. And you can continue to hold the service contract after the warranty expires.

● In addition, you will have sales rights in your territory which enable you to take orders from your service customers at a substantial profit.

● This opportunity could be the turning point of your business career. The market includes hundreds of establishments in your neighborhood. Nation-wide consumer and trade advertising has already produced widespread demand and numerous inquiries. Distribution is being established through over 1000 distributorships and dealerships from coast to coast.

● If you would like to know more about this profitable sales-service opportunity, write us today. Just ask for our "Service Folder" — it gives complete details. Write: Service Department — Automatic Door Division.

#### Intercom System

**Product:** "Port-A-Phone" portable wireless intercom system.

**Manufacturer:** General Industrial Co., Chicago, Ill.



**Features:** Simply plug into standard 120-volt a-c or d-c outlet and system works. Compact 2-way system requires no wires. Simpli-

## NATIONAL PNEUMATIC CO., INC. AND HOLTZER-CABOT DIVISIONS

125 Amory St., Boston 19, Mass.

Sales Service Representatives  
in Principal Cities throughout the Free World



Designers and manufacturers of  
mechanical, pneumatic, hydraulic, electric  
and electronic equipment and systems

Circle No. 83 on Reader Service Card



fies office-to-shop, stockroom-to-sales floor communication. Allows instant 2-way communication between 2, 3 or more persons in separate buildings or departments. Super-sensitive pick-up. Voices are transmitted up to 2½ miles within same power-line transformer circuit. Exclusive silencer eliminates line noise when standing by. Made of durable plastic and finished in mahogany, unit measures 8¼" wide, about 5½" deep and 6" high.

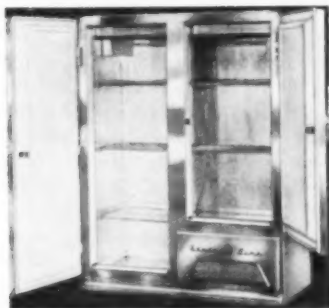
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#### New Freezer Line

**Product:** The new "Style-Line" reach-in freezer series.

**Manufacturer:** Jordan Refrigerator Co., Philadelphia, Pa.

**Features:** The sizes range from 25 cu.ft. to the 60 cu.ft. models with all models being produced in



both stainless steel and white exterior finish. In addition to the regular 34" deep reach-ins, the new line will make available for the first time the 24" deep models which are so useful behind counter installations and other places of restricted area. The line features full length doors hinged on the new pin and leaf type which permits easy removal.

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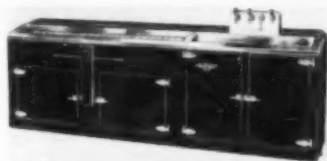
#### Club Cooler

**Product:** Combination bottle cooler, keg pre-cooler and dispenser.

**Manufacturer:** LaCrosse Cooler Co., LaCrosse, Wis.

**Features:** The new cooler not

only has the ever popular direct refrigerated faucet station but in addition is now available for the



simultaneous tapping of three kegs of beer. The club special series is produced of specially treated zinc-grip metal for better life expect-

tancy and incorporates a two-coil refrigeration system, heavy duty chrome plated hardware with a padlock feature, as well as many other distinctive features.

Circle No. 180 on Reader Service Card

#### NEW WEATHERTRON FIRM

Appointment of Cupp, Inc., Fort Wayne, Ind. as a retailer-wholesaler for the G-E Weathertron has been announced by the General Electric Co.'s Weathertron Dept.

## New Arrival in Marsh "Serviceman" Family



An instrument  
you need

## The MARSH Serviceman TIMER

#### IT SHOWS:

Total running time  
Total elapsed time  
on 24-hour dial



115 VOLT,  
60 CYCLE MODEL

For testing smaller units with compressors of ¾ hp. or less. Operates in series . . . Simply plug equipment into timer; timer into wall outlet.



230 VOLT,  
60 CYCLE MODEL

For testing larger installations regardless of horsepower. Operates in parallel. Note well shielded alligator clips for attaching to motor terminals and power lines.

This great addition to the "Serviceman" line does a vital job supremely well. Its white hairline pointer shows total time of test; red pointer shows total running time. It is easier to read, use, and interpret than a recorder . . . has no charts or leaky pens to bother with . . . yet it is very moderately priced.

Two models (opposite) cover all conditions. Note sturdy case finished in attractive hammerloay gray with sharp white numerals on black dial . . . also suction-cup feet for firm placement without damage to finish. This is the instrument you've been waiting for. Write for details, or

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Sales affiliate of Jas. P. Marsh Corporation  
Dept. P, Skokie, Ill.

# MARSH

Refrigeration Instruments

GAUGES • WATER REGULATING VALVES • SOLENOID VALVES • HEATING SPECIALTIES

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BUY FROM YOUR  
REFRIGERATION WHOLESALER

---

## **\$70,000 PHONE CALL . . .**

*Continued from page 89*

in front of the filtered air — so they can have fresh air in the building both summer and winter.

The Blaisdell policy is that everyone must be comfortable. In the most recent addition to the old plant, they have three units that provide 22 hp of air conditioning and there are only 12 people working in that shipping room. But more important than just the comfort standpoint are the items that they store there. Cotton, and the plastic holders they use for flints, must be stored in a relatively conditioned atmosphere.

Then in other sections of the plant—tabulator room, to prevent static electricity; die room, where they make the dies for the lighters; the paint room, where girls put special designs or decorations on the lighters. They have a problem here because the lacquer won't stay on the lighter unless the room is air conditioned — due to the perspiration from the operators' hands. In much of the plant the people work quite close to each other, with an intense volume of light, so it would get quite warm in winter as well as summer; thus, they have to have air conditioning and package units make it easy to make changes in the plant layout.

"There is nothing in the plant today the way it was originally," Don Wilson says. "Except the original air conditioning unit or the spots where we have put in the other units from time to time. They move the plant around these units."

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## **SELLING JUNE IN JANUARY . . .**

*Continued from page 83*

will be to include this "entertainment factor" they balk a bit, but he hasn't found too much trouble in convincing them that it's a worthwhile extra, he says. At any rate, they must be told that this "extra" has to be figured — and that if they want to do without it they can't expect what they'd otherwise be getting. Only if the customer fully understands, before the job is installed, what he's buying can a satisfied user result, Mauller insists.

The 16 January-installation jobs that Mauller sold have been the result of a special off-season promotion, in which a discount (amounting to about 8%) has been allowed to prospects who are willing to close the deal in advance of the normal busy season. Mauller says it works out most satisfactorily for him, since it keeps his men working steadily all the year 'round.

Direct mail to customers and prospects plays an important part in the Mauller sales story . . . not a month goes by that some piece doesn't go out, calling attention to the company and the services it has available. Mauller gets an assist on his direct mail from the Bryant factory and from Mike Fortier, manager of Bryant's St. Louis branch office.

Mauller's two salesmen, both of whom are part-time workers, sell on afternoons and nights, finding the latter an especially fruitful time. One man is with a fuel oil company, and finds that prospecting fits right in with his regular work.

Rounding out the sales picture, a one-year service contract (priced at \$35) is an integral part of every Mauller-installed residential air conditioning plant. Mauller says this assures him that the job will be kept in proper running order after installation — and to him this is just as important as doing the job itself.

He's looking forward to the time — not too far off, he hopes — when the only servicing work his company will be doing will be on the air conditioning systems that it has sold. At the rate he's been going, it shouldn't be too long.

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## **MAKE SALES COME TRUE . . .**

*Continued from page 75*

all times to answer any questions and to explain to any interested parties the many advantages of an air conditioned home.

A constant supply of factory prepared literature explaining the air conditioning equipment, its operation, and its functions, was kept on hand for distribution to those visitors who wanted more information.

In all, some 200,000 visitors poured through the Parade of Homes site, as many as 2200 of them coming on a single Sunday. Buckeye representatives distributed more than 20,000 promotional brochures.

This attention has so far resulted in only a few actual residential air conditioning sales which can be directly attributed to the Parade of Homes promotion, but Botkin makes it clear that there's no way of telling how many other sales may have been stimulated by this promotion without being directly traceable to it.

And even discounting completely all direct results, Botkin is convinced that the intense interest generated by such a promotion, and the awareness of home air conditioning benefits so widely spread by it, cannot help but bring to his firm an increasing volume of residential air conditioning business in the months and years to come.

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## **5 MILLION SLEEPING BEAUTIES . . .**

*Continued from page 37*

It also has been proved that the plants subjected to proper temperature and humidity conditions through refrigeration have been able to overcome and in some cases escape altogether many of the ravaging diseases inherent to young plants. According to director of plant production Akenhead, the savings realized here alone would be enough to qualify the investment that Commercial Enterprises has in its 680,160 cu. ft. of refrigerated storage equipment.

LaPrade Sloan of Mechanical Air, Inc., Rochester, N. Y., working very closely with Akenhead, helped to determine and achieve the necessary temperature and humidity conditions. Sloan's experience with a number of other nursery installations paid dividends. The Kramer Thermobank is employed extensively with the Kramer Unicon since its inception. The latter type of unit, Akenhead said, has been very welcome, since in virtually all instances these coolers are located in areas of scarce or bad water supply, and this is a way to make the water problem vanish.

## SELL COOLING TOWERS . . .

*Continued from page 81*

with lower water rates it would take as long as 8 or 10 years to amortize the equipment, and most prospects just figured that on this basis the equipment wasn't worth the cost.

Once the prospect has been sold on the value of a cooling tower, it is then up to the company's engineering department to plan the installation in such a way that installation costs do not eat up any considerable part of the savings made possible through water conservation.

### Installation Costs Tricky

For instance, it is entirely possible that the cost of installing a tower on the roof of a 4 or 5-story building to service an air conditioner in a ground floor establishment might involve piping runs and other factors which would raise the installed cost of the tower so high that the tower would be worn out before it could be amortized.

Some of the company's salesmen have sufficient engineering knowledge to enable them to closely estimate the installed cost of a tower. Those who don't must seek the aid of one of United's engineers in arriving at an estimate.

### Variety of Solutions

When it comes to installing towers of the smaller sizes, there usually is "more than one way to skin the cat". It is up to the individual planning the installation to select the location which will prove the most economical and the most satisfactory. Building codes in Columbus, as in many other communities, cause some complications in the matter of cooling tower location, but if a little ingenuity is used a means of surmounting these problems can almost always be found.

Actually, a cooling tower will operate satisfactorily if placed anywhere that enough air can reach it. Every possible "angle" on the installation must be carefully considered, for the benefit of the company as well as the customer.

The United firm has installed cooling towers in a wide variety of locations — on roofs, in basements, mounted on brackets affixed to an exterior wall, or set on a platform on the ground outside the building.

In one-story buildings, the roof is the most common location, with the tower being placed as nearly as possible directly above the unit which it serves. Care has to be taken in all such installations, of course, to make sure that the roof will support the load of the tower and the water which it will contain in actual operation.

Most common practice for roof installations is to suspend the tower on steel beams spanned from one bearing wall to another, frequently across a corner of the building.

### Basements A Problem

When installing cooling towers in basement locations, the most important consideration is to be sure that the basement is or can be vented for both intake and exhaust air. The exhaust side of the cooling tower should be ducted to a window or to a prepared opening in the basement wall. Intake air, however, can be drawn in through any opening, preferably on the opposite side of the basement from the tower location, without the use of ductwork.

Two men who work as a team handle most of United's cooling tower installations, although all of the firm's installation men have had some experience at this type of work.

Power tools, the company has found, are essential for economical installation of this type of equipment, because of the great variety of structural problems encountered. Such tools will pay for themselves, the management has found, through the time saved on just one sizeable installation.

### G-E APPOINTS GAMMON

Appointment of H. C. Gammon Co., Inc., Indianapolis, as a retailer for the G-E Weathertron has been announced by the General Electric Company's Weathertron Dept. Gammon will distribute the Weathertron in the Marion County, Ind. area.

## OPPORTUNITIES

(Classified Advertising)

Rates: for "Positions Wanted, \$6.50 minimum, limit 25 words. For all other classifications, \$8.00 minimum for 25 words or under, each additional word 20¢ boldface type or all capitals, \$10.00 minimum for 25 words or under, each additional word 25¢.

### LINES WANTED

MR. AIR CONDITIONING MANUFACTURER: DO YOU NEED TWO YOUNG MEN . . . ? with going partnership, one a graduate engineer with 10 years sales and sales training experience, the other A.B., versed in advertising, sales, sales promotion and public relations, to represent you in Washington, Baltimore and environs. We are especially interested in residential field. Can offer excellent references and a proven record of accomplishment. Address—Pox 1155, COMMERCIAL REFRIGERATION & AIR CONDITIONING MAGAZINE.

### LINES AVAILABLE

Users of ice from 500 lbs. to 5000 lbs. daily need our INSTANT ICE MACHINE. Distributors and Dealers — open the door to these new important refrigerating accounts. Substantial profit. Territories available. Write Liquid Freeze Corp., 1133 24th St., Oakland 7, Cal.

### MOTOR MAKER WINS IN "PEERLESS" NAME SUIT

In an unusual suit brought by the 60-year-old Peerless Electric Co. of Warren, Ohio, against Peerless Electric, Inc., of New York City, the New York firm was permanently restrained from using the name Peerless Electric, Inc., which it adopted in 1952 and began to use in 1954. The Warren firm asked simply for restraint and no damages.

The Warren company is a manufacturer of electric motors, electric fans and blowers and electronic equipment. The New York firm produces electric broilers.

### CENTRAL STATES SERVICE CLINIC SETS DATES

Under the sponsorship of the Milwaukee chapter of RSES, the Central States Service Clinic's annual meeting will be held in the Wisconsin Hotel on March 11, 12 and 13, 1955. Lee Miles is general chairman of the service clinic. Further plans and equipment were to be discussed Nov. 18th, during the International RSES Convention in Minneapolis.

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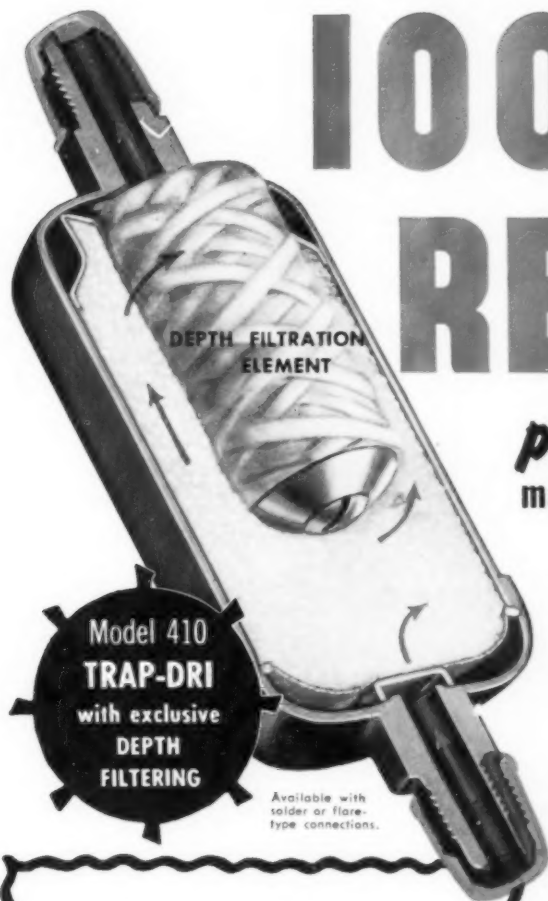
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**plus** complete moisture adsorption  
makes TRAP-DRI your BEST BUY



Model 410  
**TRAP-DRI**  
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DEPTH  
FILTERING

Available with  
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Two Trap-Dries factory-connected in parallel operate as a single unit. Provide same capacity as much larger units, eliminating heavy castings, larger fittings and bulky, hard-to-assemble units, and saves you money.



## Removes and prevents formation of acids that corrode iron, copper, brass, aluminum—

A very severe test by a national organization proves conclusively that acid was completely removed, thus assuring 100% protection against troublesome corrosive action.

**IF YOU MAKE, INSTALL OR SERVICE REFRIGERATION SYSTEMS  
— A-P TRAP-DRI IS THE BEST PROTECTION MONEY CAN BUY!  
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